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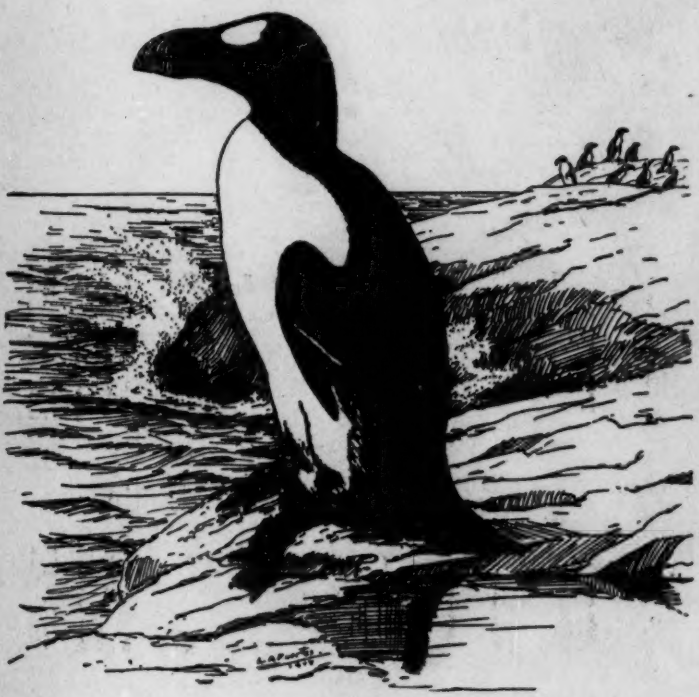

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CONTENTS.

IN MEMORIAM—EUGENE PINTARD BICKNELL. By *Maunsell Schieffelin Crosby*. (Plate V) 143

THE TWILIGHT SONG OF THE WOOD PEWEE: A PRELIMINARY STATEMENT. By *Wallace Craig* 150

BIRD BANDING—IN PROGRESS AND PROSPECT. By *Frederick C. Lincoln*. . 153

GAME BIRDS OF THE HOOPER BAY REGION, ALASKA. By *H. B. Conover* (Plates VI and VII) 162

ON A NEW FORM OF LUSCINIA DAVIDI (OUSTALET) FROM THE LI KIANG MTS., YUNNAN, CHINA. By *Prof. Peter P. Sushkin* 181

A FURTHER STUDY OF THE HOME LIFE OF THE NORTHERN PARULA AND OF THE YELLOW WARBLER AND OVENBIRD. By *Henry Mousley*. (Plate VIII) 184

OBSERVATIONS AND BANDING NOTES ON THE BANK SWALLOW—II. By *Dayton Stoner*. 198

TRYING TO TAME A GREAT HORNED OWL. By *W. J. Baerg* (Plate IX) . . 214

SCHIOLER'S 'BIRDS OF DENMARK.' By *Glover M. Allen*. 218

GENERAL NOTES.—Kittiwake in Ohio, 228; A New Name for *Saundersia*, Dwight, 228; A Blue Goose (*Chen caerulescens*) in Massachusetts, 228; Blue Goose (*Chen caerulescens*) in South Carolina, 228; White-fronted Geese in Virginia, 229; Whistling Swan Wintering at Branchport, N. Y., 229; Colorado Ducks, 231; Wood Ibis and Egret in Hopkins Co., Ky., 231; The Little Blue Heron (*Florida caerulea*) Near Berwyn, Penna., During the Season of 1925, 232; The Egret at Wildwood Lake, Dauphin County, Penna., 233; Little Black Rail in Illinois, 233; Occurrence of King Rail about New York City in Winter, 234; Red Phalarope at Sea 100 miles West of Gibralter, 234; Black-necked Stilt in Winter on the North Carolina Coast, 234; A New Genus *Acentrortyx*, proposed for *Francolinus nahani* Dubois, 235; Arctic Three-toed Woodpecker in West Chester Co., N. Y., 235; Long-eared Owl capturing Ruffed Grouse, 236; Crow Alighting on the Water, 237; The Blue Jay in Eastern Massachusetts, 237; Changed Habits of Blue Jay at Philadelphia, 239; The English Starling at Chicago, Ill., 239; Foster Parentage, 240; Status of the Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*) on the Atlantic Seaboard, 241; Pine Siskin, fifty miles out at Sea, 242; Marriage Relations of a Red-eyed Towhee, 242; A New Race of Rufous-crowned Sparrow, from North-central Lower California, 244; Harris' Sparrow in Colorado, 245; White-winged Junco in Pennsylvania, 245; The Lark Sparrow (*Chondestes grammacus*) in Maine, 246; Dickcissel (*Spiza americana*) in Massachusetts, 246; Note on the Nesting Habits of the Tree Swallow, 247; Sycamore Warbler in Connecticut, 248; Mockingbird of Marquette Michigan, 248; Bewick's Wren (*Thryomanes bewicki bewicki*) Wintering on the Coast of South Carolina, 249; Notes from Southwestern Michigan, 249; Some Records from the Madison, Wis., Region 1923, 1924, and 1925, 250; Notes on North Carolina Waterfowl, 251; Notes from Central South Carolina, 252; Notes on the Nesting Birds of Northern Santa Fe County, N. M., 253; An Audubon Bill, 254.

RECENT LITERATURE.—Hellmayr's 'Catalogue of Birds of the Americas,' 255; Dwight's 'Gulls of the World,' 255; Wright and DeWar on 'The Ducks of India,' 257; Simmons' 'Birds of the Austin Region,' 258; Spitzbergen Papers, 259; Kirke Swann's 'Monograph of the Birds of Prey,' 260; La Touche's 'Handbook of Birds of Eastern China, 260; Lynes on the Ornithology of Sous Territory, South Marocco, 261; Levauden et al on the Ornithology of Tunisia, 261; Aves for 1924, 261; Mathews' 'The Birds of Australia,' 262; Van Oordt and Verwey's 'Catalogue of the Birds of the Netherlands, 262; Chapman on New Birds from Ecuador and Peru, 262; Lord Rothschild on a Collection from N. W. Yunnan, 262; Hartert on the Types in the Tring Museum, 263; Bangs and Penard on the Henry Bryant Types of Birds, 263; Recent Papers by Peters, 263; Iredale on George Forster's Bird Paintings, 264; Recent Papers by Domaniewski, 264; Stresemann on Calocalia and Otus, 264; Relation of Palaearctic Birds to the More Important Forest Insect Pests, 265; 'The Lone Swallows,' 265; Brooks' 'Handbook of the Outdoors,' 266; Correction, 266; The Ornithological Journals, 266; Ornithological Articles in Other Journals, 272.

CORRESPONDENCE.—Hawk Destruction, 275; Abundance of Woodcock, 277.

NOTES AND NEWS.—Death of Prof. Schalow, 278; Sixth International Ornithological Congress, 278; Swan Counts, 278; Lewiston, Me., Bird Reservation, 278; The Ottawa Meeting, 279; Baldwin's Research Work at Cleveland Ohio, 279. Dr. Fisher's Birthday Celebration, 279; List of A. O. U. members, 280.

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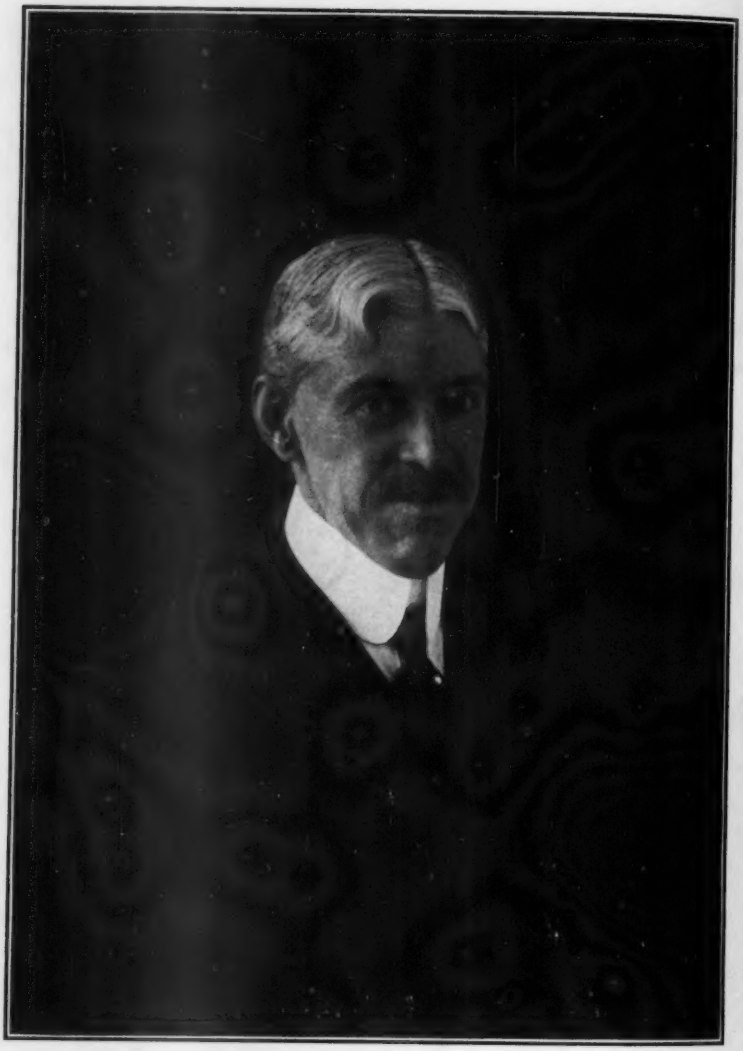

Yours sincerely
C. P. Pickwell

THE AUK:

A QUARTERLY JOURNAL OF

ORNITHOLOGY.

VOL. XLIII. APRIL, 1926. No. 2.

IN MEMORIAM: EUGENE PINTARD BICKNELL. 1859–1925.

BY MAUNSELL SCHIEFFELIN CROSBY.

Plate V.

EUGENE PINTARD BICKNELL, the youngest founder of the American Ornithologists' Union, died at his home at Hewlett, Long Island, N. Y., on February 9, 1925.

He was born at Riverdale-on-Hudson on September 23, 1859, being the sixth son of Joseph Inglis Bicknell and Maria Theresa Pierrepont. He was descended from Zachary Bicknell and his wife Agnes, who came to Weymouth, Massachusetts, from England in 1635 bringing with them one son, John. John had five sons and from these are said to be descended all the Bicknells in the United States. Another paternal ancestor was Gregory Dexter, who came to Rhode Island in 1643 and was president of Providence and Warwick in 1653–1654. Still another member of this family was the Reverend Charles Inglis, who was Rector of Trinity Church, New York, during the War of the Revolution. He was a Loyalist and insisted on praying for the king, although the patriots marched a company of Continental soldiers into the church to intimidate him. After the Revolution he was forced to flee to Canada where he became the first Bishop of Nova Scotia.

On his mother's side Mr. Bicknell was descended from Sir Robert de Pierrepont who fought under William the Conqueror at Hastings in 1066. The Pierreponts came to America in 1640 and settled at Roxbury, Massachusetts. One of the early members of

the family, the Reverend James Pierrepont of New Haven, was a founder of Yale College and gave all his books to the infant institution during his life time, forming a nucleus around which the Yale College Library was built. Mr. Bicknell was a member of the Sons of the Revolution, the Society of Colonial Wars, the Huguenot Society of America and the St. Nicholas Society.

He did not go to college, but nevertheless received a thorough education, which is evident from the ability shown in his first writings. He went into business at an early age and for many years was connected with the firm of John Munroe & Co., foreign bankers, eventually becoming a partner. On October 9, 1901 he married Edith Babcock at Riverdale and they had two daughters, Eleanor Franklin and Edith Evelyn. The same year he removed his home to Long Island, where for a number of years he served as Vestryman of Trinity Church, Hewlett, and several times as delegate to the Diocesan Convention.

From his early youth he was interested in natural history, and he was one of very few ornithologists of his time who habitually used the field glass more than the gun and kept daily lists of every species seen. His hearing in those days was especially acute and discriminating, so that he was often able to pick out a low, lisping note from a loud medley of bird song. His Riverdale diaries were kept with great faithfulness and care and are extremely interesting to us, showing as they do the conditions existing about New York City fifty years ago before the natural bird haunts had been destroyed by the grasping tentacles of civilization. (It is planned to publish an abstract of these records at an early date.) But he also made an interesting collection of local birds, which has been presented to Vassar Institute, Poughkeepsie, N. Y. During the spring migration period he sent a postcard almost daily to Dr. A. K. Fisher, who lived about twenty miles to the northward, giving the species seen for the first time on that particular morning. In the autumn migration the compliment was reversed and he would receive a notice of the species which he might expect to see the following day.

Through his activity over the area which he studied, he from time to time made very interesting records. For years, however, he was unable to find the Yellow Rail, until one morning while

hurrying to the train he found a beautiful specimen, lying in the middle of a narrow path, killed by striking telegraph wires. In the month of April following the severe winter of 1874–75, which brought many northern birds to the lower Hudson Valley, he found close to his house the nest and eggs of the erratic Red Crossbill.

On one occasion he and Dr. Fisher spent the night in a rickety shack on Slide Mountain, in the Catskills, so as to be present at the chorus of bird song at dawn. On the way up the mountain they had seen several dead porcupines along the trail and Mr. Bicknell was indignant that the helpless animals should be wantonly killed. The early part of the night was enlivened by a violent thunderstorm. Towards morning Dr. Fisher was awakened by a loud racket and in the dim light witnessed the demise of a porcupine which had persisted in trying to climb across Mr. Bicknell's face, and little was said thereafter when dead porcupines were encountered.

In 1878 his first technical paper, "Evidences of the Carolinian Fauna in the Lower Hudson Valley," appeared in the 'Bulletin of the Nuttall Ornithological Club,' when he was only eighteen years old. In the same year he was one of ten naturalists who organized the Linnaean Society of New York and he was its president from 1879 to 1887. In 1882 this society published his "Review of the Summer Birds of Part of the Catskill Mountains." It was at this time that he discovered Bicknell's Thrush, described by Ridgway in the 'Proceedings of the United States National Museum' (IV, 374–379).

When the American Ornithologists' Union was formed he was elected temporary secretary of the first meeting and was appointed on the committees on Migration of Birds and on The European House Sparrow, and received a resolution of thanks for his services on the Committee on Arrangements. The next year he was appointed a member of the original committee on Bird Protection and in 1885 became secretary of this committee at its reorganization. In 1884 and 1885 "A Study of the Singing of our Birds" appeared in six installments in volumes I and II of 'The Auk.'

By degrees he spent more and more of his time in the study of botany and in consequence devoted less to ornithology so that,

although he remained a keen observer, he made no contributions to ornithological literature between 1895 and 1917. Instead he published a number of important items in 'Addisonia,' 'Rhodora' and 'Torreya,' and in the 'Bulletin of the Torrey Botanical Club.' On January 13, 1880, Mr. Bicknell was elected a member of the Torrey Botanical Club and in the Club's bulletin for May of that year appeared his first botanical papers. In 1896, he became a member of the newly organized New York Botanical Garden and also of the Philadelphia Botanical Club. He was a member of the corporation of the New York Botanical Garden from 1910 until his death and of its board of scientific directors from 1913 to 1923, resigning at that time on account of ill health. He also became a member of the American Association for the Advancement of Science and of the Botanical Society of America. Mrs. Bicknell has presented his extensive collections of plants and his botanical books to the New York Botanical Garden.

Dr. Barnhart, in the 'Bulletin of the Torrey Botanical Club' for April, 1925, calls him "one of the most careful observers among American amateur botanists" and states that "from the number and value of his contributions to botanical literature, one might reasonably have inferred that he was by profession a scientific worker." He discovered and described many new species of plants, and between the years 1908 and 1919 published in the 'Bulletin of the Torrey Botanical Club' "The Ferns and Flowering Plants of Nantucket" in twenty installments, which was his *magnum opus* in botany. Dr. Barnhart's bibliography lists 74 titles and installments on botanical subjects and 26 on ornithology and general natural history, a total of exactly 100.

In Mr. Bicknell's early ornithological work there is frequent mention of the flora encountered so that his botanical achievements did not indicate a change of hobby, but rather the fruition of a taste he had always possessed to a high degree.

"Evidences of the Carolinian Fauna in the Lower Hudson Valley" is a brief discussion of the now well-known extensions of this faunal division up the Hudson and Connecticut Rivers and includes, among the breeding species considered, the Acadian Flycatcher, the Rough-winged Swallow and the Blue-winged, Kentucky and Hooded Warblers. "A Review of the Summer Birds of a

Part of the Catskill Mountains," on the other hand, impresses one with the strong Canadian fauna found between two thousand and four thousand feet of altitude on and near Slide Mountain. Here the typical breeding species are: Northern Pileated Woodpecker, Yellow-bellied Sapsucker, Olive-sided and Yellow-bellied Flycatchers, Purple Finch, Red Crossbill, White-throat, Junco, Blue-headed Vireo, Northern Parula, Black-throated Blue, Myrtle, Magnolia, Blackpoll, Blackburnian, Black-throated Green, Mourning and Canadian Warblers, Winter Wren, Brown Creeper, Red-breasted Nuthatch, Golden-crowned Kinglet, Bicknell's, Olive-backed and Hermit Thrushes. This is by far the best ornithological study of the Catskill Region that has ever been printed.

"A Study of the Singing of our Birds" is based on a consideration of song in relation both to nesting and moulting, silence being usual during moult and a second but inferior song season being noted in many species after the renewal of the plumage in late summer. Another article is an account of Bicknell's Thrush as he found it on its breeding grounds. His remaining papers are chiefly concerned with the status of one or another species either near New York or on the south shore of Long Island.

In his later days Mr. Bicknell returned again to the pursuits of his youth and made a careful study of the birds of Long Beach, Long Island, spending whole days there with great regularity whenever his business permitted, usually Thursdays. These observations have been made available for students, as he generously permitted their inclusion in Griscom's 'Birds of the New York City Region.'

It was when he was on one of these trips that I met him accidentally, having motored down to the beach from Camp Mills for a swim on a hot June day. Mr. Bicknell was looking over a large flock of Sandpipers with a telescope, and I had the hardihood to introduce myself to him. He was very skillful in the use of telescopes, carrying a 40-power for still subjects and using a 20-power for birds in flight, picking up and following flocks of wild fowl with ease as they sped along the coast. His ability to identify a live bird in the field often seemed remarkable. He was an indefatigable walker, and in spite of his mature years and none too robust health, he on more than one occasion made younger men

work hard to keep up with him over the soft sand and wet marshes of the twelve-mile round trip from Long Beach Station to the eastern end of the beach and back.

Mr. Bicknell was very modest and retiring, seldom went to scientific meetings or mingled with his fellow naturalists, and cared nothing for clubs and social diversion. Low voiced and quiet, his manners would be described as courtly and old-fashioned by the present generation. While reserved, he was nevertheless of kindly disposition and was helpful to many younger students. His system of tabulating his records was a model of accuracy and lucidity and I adopted it at once for my own use. He intended to publish his Riverdale notes, but unfortunately did not live to have this hope fulfilled.

I am indebted to Dr. Barnhart for much of my information, gleaned from his memorial in the 'Bulletin of the Torrey Botanical Club,' as well as for the bibliography of his ornithological writings appended hereto, and also to Dr. Fisher, who was his neighbor for many years.

ZOOLOGICAL PAPERS OF MR. BICKNELL.

A comparison of winter birds. Forest and Stream VI: p. 133. April 6, 1876.

Early spring on the Hudson. Forest and Stream VI: p. 148. April 13, 1876.

Field notes at Riverdale. Forest and Stream VI: p. 233. May 18, 1876.

Birds of our suburbs. Forest and Stream VI: pp. 386–387. July 20, 1876.

On the animal and vegetable life as observed at Riverdale. The Country I: p. 334. March 30, 1878.

Evidences of the Carolinian Fauna in the lower Hudson Valley. Principally from observations taken at Riverdale, N. Y. Bull. Nuttall Ornith. Club III: p. 128–132. July, 1878.

Capture of two rare birds at Riverdale, N. Y. Bull. Nuttall Ornith. Club IV: p. 60, 61. January, 1879.

The Carolina Wren (*Thryothorus ludovicianus*) breeding in New York. Bull. Nuttall Ornith. Club IV: p. 183, 184. July, 1879.

Remarks on the nidification of *Loxia curvirostra americana*, with a description of its nest and eggs. Bull. Nuttall Ornith. Club V: p. 7–11. January, 1880.

The English Sparrow. Yonkers Gazette XIV. February, 1880.

Dendroeca palmarum palmarum in New York. Bull. Nuttall Ornith. Club V: p. 182. July, 1880.

A sketch of the home of *Hylocichla aliciae bicknelli* Ridgway, with some critical remarks on the allies of this new race. Bull. Nuttall Ornith. Club VII: p. 152–159. July, 1882.

A review of the summer birds of a part of the Catskill Mountains, with prefatory remarks on the faunal and floral features of the region. Trans. Linn. Soc. N. Y. I: p. 113–168. December, 1882.

A study of the singing of our birds. Auk I: p. 60–71. January, 1884.

A study of the singing of our birds. (Continued.) Auk I: pp. 126–140. April, 1884.

A study of the singing of our birds. (Continued.) Auk I: pp. 209–218. July, 1884.

A study of the singing of our birds. (Continued.) Auk I: pp. 322–332. October, 1884.

A study of the singing of our birds. (Continued.) Auk II: pp. 144–154. April, 1885.

A study of the singing of our birds. (Concluded.) Auk II: pp. 249–262. July, 1885.

(A specimen of *Helminthophila leucobronchialis* in New Jersey.) Auk II: p. 378. October, 1885.

Prothonotary Warbler near New York City. Auk III: pp. 306, 307. July, 1895.

(Ornithological biographies.) In: Chapman, Frank Michler. Handbook of birds of eastern North America. New York, 1895. (Purple Finch, pp. 281–282; Fox Sparrow, pp. 309–310; Hermit Thrush, p. 400. Repeated, with different paging, in subsequent editions.)

The Acadian Chickadee on Long Island. Auk XXXIV: pp. 91, 92. January 2, 1917.

Late southward migration of the Cape May Warbler on Long Island. Auk XXXIV: pp. 483, 484. October 10, 1917.

The Short-eared Owl breeding on Nantucket. Auk XXXVI: pp. 284, 285. 8 April, 1919.

The status of the Black Gyrfalcon as a Long Island bird. Auk XLI: pp. 64–68. January 10, 1924.

Rhinebeck, N. Y.

THE TWILIGHT SONG OF THE WOOD PEWEE: A PRELIMINARY STATEMENT.[1]

BY WALLACE CRAIG.

THE twilight song of the Wood Pewee is composed of three different phrases which may be represented as follows:

The bird sings regularly at dawn, and occasionally at sunset, a long composition consisting of these three phrases repeated in a varying order of succession. The morning song contains 500 to 1,000 or more phrases, and it may last for 40 minutes. The evening song is probably not so long. This entire composition is what I call "the twilight song."[2] Although the song is of such extraordinary length, it is actually a continuous piece of music. Each phrase occupies one bar, with a quarter-rest at the end, as shown in the musical notation; thus the rhythm is continuous throughout the entire composition.

The order of the phrases in this composition is full of significance. Sometimes the three different phrases are repeated again and again in the order in which they are given above: 1 2 3 1 2 3. . . Sometimes they are repeated in the order 1 3 2 1 3 2 . . . , and sometimes 1 3 2 3 1 3 2 3. . . There are also other sequences which are regularly sung. A sequence such as 1 2 3 or 1 3 2 I shall speak of as a "simple sentence." These simple sentences are organized into compound sentences. The formation of compound sentences is governed by laws which favor certain sequences of simple sentences, and exclude others; for example, the sequence 1 2 3 1 3 2 is common, but the sequence 1 3 2 1 2 3 does not occur once in all my records.

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[1] From the Biophysics Laboratory of Harvard University.

[2] The name is adopted from the writings of Henry Oldys. He gave the name "twilight song" to that small bit of melody which I have called "phrase 3." But I think it is better to speak of the entire composition as the twilight song, and to speak of each of the three elements of the composition as a "phrase."

Often the same simple sentence, or the same compound sentence, is repeated many times in succession. Such a repetition of the same sentence I name a "series." These series are governed by certain laws, and they recur in a more or less regular manner. Finally, in some cases at least, the entire composition exhibits an orderly succession of divisions, each division of the composition containing a somewhat different sequence of sentences.

There are very great individual differences in the composition of the twilight song. All individuals sing the same three phrases, and most of them sing the same simple sentences; but (so far as can be judged from my records) there are no two individuals whose compositions are precisely alike in regard to the compound sentences, the series, and the divisions of the whole composition. Each individual adheres to his own style of composition. Two or more records from the same singer, obtained on different mornings, are very similar to each other and very different from the records obtained from other singers.

The facts which have been thus briefly summarized are so astonishing that they would be scarcely credible, were not the evidence for them perfectly clear and definite. Herein lies a great advantage in studying the song of this species. Wood Pewees (with few exceptions) keep the three phrases perfectly distinct, so that a record can be made with few or no errors, and the order of succession of the phrases can be studied with great accuracy.

In this short article, no attempt is made to present a complete account of the song, for three reasons. First, a complete account cannot be given in an article in a journal: it will require a monograph with many tables and graphs. Secondly, although I have already thirteen records of the twilight song, containing a total of more than 7500 recorded phrases, these are quite inadequate for a study of the song as a whole and of the individual variations. The primary object in publishing this article at the present time is to ask other observers to make some records for me. Thirdly, it will be best for new observers, in making their records, to be entirely unprejudiced by any theory as to what should be the order of succession of the phrases.

I request that persons who have time and opportunity to do so will make records of the twilight song of the Wood Pewee and

send them to me. It is desirable to have some records from widely distributed localities. At present I have only eleven records (some of them very incomplete) which I made in Maine, and two which were made for me by Mrs. L. A. Test, of Lafayette, Indiana. I need more records from Maine, more from Indiana, and others from other states.

To make the record, you simply listen to the song and as each phrase is sung you write its number, 1, 2 or 3 as the case may be. In order to get a complete record you will need to be at the Wood Pewee's station, with paper and pencil ready, before he begins to sing. He begins commonly before sunrise, when the day is dawning. You may need to make more than one attempt before you succeed in getting a complete record. But if you once locate your bird and get a partial record of his twilight song you can count pretty surely on getting a complete record from the same bird if you go to the same place the next morning, or a few mornings later.

The season when the song can be heard, so far as known, extends approximately from June 2 to July 20. You can be most sure of hearing the song in the early and middle part of the season.

In requesting these records, I am asking a great favor. Few persons have the time to spare and also the necessary interest and enthusiasm to rise and go out at three o'clock[1] in the morning to hear a bird sing. If you, kind reader, are one of these few persons, please plan to make some records of the twilight song during the coming summer. If you can get even one complete record it will be very valuable. I intend to publish all records sent to me, with the name of the observer in each case.

There is no technical difficulty in making the records. It can be done by any person who is careful and accurate and can follow a tune. But there are some details, not mentioned in this article, which should be attended to if possible. Therefore I have written a sheet of directions for making the records. Please write to me for a copy of these directions.

695 Huntington Avenue, Boston, Mass.

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[1] The time will vary greatly according to the latitude, the date, and the relation between standard time and "sun time" at each locality.

BIRD BANDING—IN PROGRESS AND PROSPECT.[1]

BY FREDERICK C. LINCOLN.

BIRD banding, as a method in ornithology has come to stay. Occupying a position with the shotgun, the field glass and the scalpel, it bids fair to become the court of last appeal in the determination of many facts concerned with the migration and life histories of birds. Under the direction of an internationally known Government scientific bureau, the banding of birds in America promises the detailed solution of many ornithological problems, and contributions of the utmost importance will be forthcoming to those interested in learning the complete life histories of the birds around them.

It is nearly six years since the American Bird Banding Association passed into history and its activities were taken over by the Biological Survey. During that time a wave of interest in this so-called "new" form of study has swept across the United States and Canada and has resulted in the organization of four separate associations, each having as its reason for existence, the betterment of the cooperation of exponents of bird banding who are operating within the limits of its territory. Two of these associations have begun the issue of bulletins, while the others have established banding departments in two of the leading ornithological journals.

In any consideration of what is being accomplished, it must be first remembered that this method differs from all others in that it approaches the problems from the individual aspect, that is, it begins its researches with individual birds, and works from them and through them to the solution of the general problems. It is axiomatic therefore, that the accumulation of useful data must progress slowly and much time must elapse before conclusive reports can be issued. Such caution is likewise demanded because of the very positive character of the data involved, the full sig-

[1] Read before the American Ornithologists' Union, at New York City on November 11, 1925, and before the Wilson Ornithological Club and Inland Bird Banding Association, at Kansas City, Mo., on December 29, 1925.

nificance of which can only be evaluated when additional data of like nature are secured. It is possible, however, at this time to present briefly a sketch of the work in progress and it is highly desirable that ways and means be found for extending these activities to the end that additional species may be brought within the scope of the banding method.

In outlining some of the results that have been made available, it seems expedient to treat first a few species of migratory waterfowl, for it is obvious that the first detailed reports will be based upon the returns from banded birds of this group. Last year, in the United States alone, over two and a quarter million hunting licenses were issued by State game departments. A large number of these hunters (unknown to themselves) are potential factors in collecting records from banded game birds and occasionally also from banded birds of other classes. The possibilities of returns of non-game species are limited by the fact that only about one thousand persons hold non-game bird banding permits and unfortunately not all of these are actually engaged in the operation of banding stations. It is true that occasionally a banded non-game bird of one of the smaller kinds is accidentally caught or killed and the facts reported, but it is apparent that the number of workers is greatly disproportionate in these two groups, and that station operators, potentially in the minority, are entitled to special commendation for the excellent results they already have obtained.

At the Cambridge meeting of the A. O. U. in 1923, the author presented a paper dealing with the migration of the Mallard, based on returns of banded birds received up to that time. Data since accumulated necessitate a thorough revision of the outline then made. The material to be incorporated consists of about 1,150 returns from a total of about 5,800 birds, banded chiefly in Illinois, Missouri, Louisiana, and Canada within a period of three years.

The banding work done in the vicinity of the mouth of the Yukon River, Alaska, in the summer of 1924, has yielded information of the greatest importance. About forty returns have been received from about 250 Cackling Geese clearly indicating a southward migration by way of Nelson Island, across the Alaska peninsula, through the Queen Charlotte Islands, to the coasts

of Washington and Oregon and thence to the interior and on southward to winter quarters in California at Tule Lake and in the Sacramento and San Joaquin Valleys. The greatly restricted winter range of this species as revealed by banding returns is a matter for serious thought by ornithologists and sportsmen.

Another species of waterfowl that has been banded in fair numbers at widely separated points, so that returns may be evaluated along more general lines, is the Blue-winged Teal. Over eleven hundred of these birds have been banded and there are at hand over 160 return records.

The study of the Black-crowned Night Heron that has been carried on for three years under the auspices of the Northeastern Bird Banding Association likewise is proving a fruitful investigation. Close to 4,000 young birds have been banded and about 100 good return records obtained. Many of these are from points far to the north of the breeding colony, showing the wandering that is indulged in by many Herons after the breeding season. In addition, there are recoveries from southern points including Florida, Cuba and Jamaica.

Other Herons also have been banded in fair numbers and are yielding returns, some of particular interest. A Snowy Egret banded at the Salt Lake marshes, Utah, during the past summer was recently killed on the Rio Grande near El Paso, Texas, while Reddish Egrets banded at Green Island near Brownsville, Texas, have been taken as far south in Mexico as the mouth of the Chumpan River, in the State of Campeche.

Cormorants, usually known in the duck country as "nigger geese," are supplying a surprising number of returns. The data at hand are all from birds of the double-crested species which had been banded in the Canadian provinces of Quebec and Saskatchewan. Only one return has thus far been received for a Quebec bird, and that one was killed on Long Island, New York, but four records of birds banded in Saskatchewan have been received within the last year. These birds were killed in Missouri, Texas, Louisiana, and Mississippi. A species that furnishes such indications of a large percentage of returns should receive further attention and this, it is hoped, can be given in another season. There also is an economic aspect to these data because the fish-eating habits of

Cormorants have brought them into disrepute in many parts of the country.

The work with Gulls and Terns has similarly been gratifyingly successful. Prior to July 1, 1925, over 1,800 Herring Gulls had been banded chiefly in the Great Lakes and on the North Atlantic coast, a number that was almost doubled by the campaign during the past season, through the auspices of the Inland Bird Banding Association. The number of returns is only 75 to 100, principally because these birds are non-game species protected by law and are therefore not frequently killed. These are obviously insufficient to warrant any general deductions, but they do nevertheless reveal certain features of decided interest, one of which is the entire lack of consistency in migration. Gulls are notoriously nomadic in habit, but it has been shown that certain European species, while wanderers to a considerable degree, do maintain more or less general lines of flight. As yet we have not been able to work out such lines for the Herring Gull in America.

The Caspian Tern seems to follow flyways that admit of accurate definition. Up to July 1 of this year, 1,049 birds had been banded, yielding forty-five returns. The figures of banding have been more than doubled by the past season's activities and the number of returns will accordingly be proportionately increased. Two southerly highways have been indicated by the returns received, one down the Mississippi Valley and the other down the Atlantic coast from Chesapeake Bay. These two routes may possibly unite in southern Florida and then continue to winter quarters in northern South America.

The case of the Common Tern is very different. Despite the fact that between 7,000 and 8,000 of these birds have been banded, only about twenty usable returns have been received, indicating that it will be necessary for coöperators to make special efforts to effect returns of these birds.

The Mourning Dove is of particular interest because of its peculiar position under the Migratory Bird Treaty Act. Its status as a migratory bird has been challenged on several occasions and it is therefore a matter of much import to state that there are now available in the bird banding files many records showing the extent of the migration of this bird. Many more should be banded

and it is particularly desirable that banding be carried out at the northern limits of its range, in southern Canada. Birds marked in Illinois have been taken in Louisiana, Florida, and Georgia.

Indications at this time point to early reports dealing with the different species of Grackles. Coöperators have been able to band about 2,000 of these birds, chiefly in Illinois, Indiana, Ohio, and Pennsylvania, from which about 200 returns have been received. In certain regions these birds constitute economic problems of no small importance and when present in large numbers, farmers frequently take drastic means for their control. This, of course, increases the probability of returns and also suggests a practical application of bird banding information that will be of the highest character. Among other interesting recoveries, mention may be made of a bird banded at Auburn, Alabama, on March 6, 1925, by Prof. Henry G. Good, and recaptured on May 2, 1925, at Pawnee City, in southeastern Nebraska.

The Flicker, while not yet productive of a large number of returns, usually yields data of more than passing interest. More than 1,200 have been banded, while the returns number 25, a little more than two per cent. There have, however, been returns of birds banded in Saskatchewan and recovered in Texas, indicating a migratory highway that will be of much interest when it is possible to fill in the gaps.

Among the Fringillidae there are four or five species that merit special attention because of their quick response to the trapping methods generally employed. Of these, the Song Sparrow stands first, the total number of individuals banded coming close to 10,000 and which have yielded about 500 returns or six per cent. Most of these data are from the Eastern United States, where this species has been a favorite at almost every station. The great bulk of the returns obtained are from the original station of banding, and, while there are certain migration indications, the extent of the movement has not yet been ascertained.

The migration of the White-throated Sparrow will doubtless supply many unusual features when sufficient data are available. About 6,500 of these birds have been banded, but many coöperators who annually trap large numbers of White-throats report no returns from bandings of previous seasons. This in itself may

be considered as an indication of an exceptional migration and one that should cause station operators to make special efforts to capture these birds in still larger numbers.

In California, studies of the movements of the White-crowned Sparrow and its races, the Gambel's and Nuttall's Sparrows, are receiving attention at many points. One coöperator, while doing field work recently in Modoc County, witnessed a heavy southward movement of these birds and was able to band three or four hundred. As these birds were apparently moving toward the region in the southern part of the state where many active stations are located, it would appear that there is an excellent possibility of obtaining valuable return records.

Two other fringilline species, the Purple Finch and the House Finch, are receiving attention in a manner that promises information of exceptional interest. These closely related birds have responded quickly to the inducements of the trapping station, and as a result over 8,000 Purple Finches have been marked, principally in Michigan and New England, and 2,500 House Finches have been banded around Los Angeles, Calif., which have yielded 470 and 121 returns, or six and five per cent respectively. Early in the development of the trapping station method, studies of plumage were strongly advocated by Dr. Charles W. Richmond, of the U. S. National Museum. These species seem to offer the best material for initial investigations of this character and it is a pleasure to report that the possibilities of such activities are being realized by several cooperators. A Michigan cooperator, recently reported that he had banded over 4,000 Purple Finches which have yielded 250 returns. Of these birds he has the most detailed notes which trace the transition of plumage from the first season on to the three or four year old adult. His work is being checked at stations in the New England states, principally by one at Peterboro, N. H. In California similar studies of the House Finch are well under way and we may look forward with assurance to the appearance of reports on the plumage of these birds that would not be possible were the investigations confined to the older methods.

Turning now to the work in prospect all subsequent remarks may be prefaced by the statement that it would be of the greatest importance if all those interested in these investigations would give

consideration to ways and means of bringing additional species within the scope of the banding method, and to methods of banding much larger numbers of individuals of the species selected. In the final analysis, bird banding depends for its results upon quantity production. In other words, in order to accumulate data more rapidly pertaining to a certain species, efforts must be so concentrated that great numbers of that species will be banded. This accumulation also will be in direct ratio to the ability of operators to retrap those banded or to other factors that bring about return information. The special investigations already begun should be continued and extended as far as possible, while steps should be considered for similar investigations with other species.

Other species of Gulls may yield data entirely different in character from those from Herring Gulls. European studies indicate that this may be confidently expected. The Laughing Gull has already received some attention, but there are large colonies on the south Atlantic and Gulf coasts that have not been touched. The same is true of the large colonies of Royal and Cabot's Terns of those regions. The Franklin's Gull of the interior also may be expected to yield interesting results and it is a pleasure to report that cooperators of the University of Alberta are making plans for extensive work next year with this species.

On the Pacific coast we already have had banded some Glaucous-winged Gulls, but there is opportunity for extensive operations with this species as well as with the California and Western Gulls. The Cormorants of that region should likewise receive attention.

Shore-birds, particularly the larger species, offer exceptional opportunities. The Biological Survey has been in communication with interested persons in Argentina, who will be on the lookout for banded Golden Plover or Yellow-legs, if they can be assured that a large number have been banded. These birds do not present a problem impossible of solution, as it is entirely a question of experimentation and an application of our boasted American ingenuity. It may be considered as a challenge, but one that can be accepted with confidence of ultimate success.

Another species for which information is badly needed is the Woodcock. This bird is not easy to secure and the cooperator

who can devise a successful method of capture will make a contribution of the utmost importance.

The Rails and the Diving Ducks likewise offer problems to the ingenious worker and they constitute important groups for which fuller information is greatly desired.

The Chimney Swift should by all means receive attention. During the fall migration of 1925, large numbers of these birds were banded demonstrating that it is entirely possible, for every cooperator living within the range of the species, to capture many of those breeding in the vicinity of his station. Since it has been found that in the migratory season whole flocks may be taken, there is great probability of numerous returns.

This applies likewise to the Purple Martin which can be taken and banded in large numbers if cooperators will give them adequate attention. It is a relatively simple matter to arrange Martin houses so that they may be raised and lowered on their standards and when equipped with nest box trap doors, which are now familiar to everyone, it should be possible to organize this phase of the work so that the members of many colonies will be wearing bands before the fall migration of 1926.

The Blue Jay and the Crow are species to which special efforts should be directed. Two or three years ago the Biological Survey urged the desirability of banding Blue Jays, as the facts concerned with their migrations are very imperfectly known. Many Jays have been banded and some valuable data are available, but not nearly enough to warrant the preparation of a report. The case of the Crows is one of economics, for they constitute a problem in some localities that is decidedly serious. But with all our knowledge, we still lack important facts that would be of the utmost importance in taking intelligent action with reference to their proper control.

The species mentioned are suggested for special study because of their importance economically or because a start has already been made in that direction. And it is highly desirable that everyone interested in bird banding give this matter serious attention, and offer suggestions for the further development of our activities.

In conclusion, it is pertinent to direct attention to the important

contributions to knowledge that may be made at every bird banding station through intensive effort with one or more species. The researches of Mr. S. Prentiss Baldwin with the House Wren are excellent examples of this character and should be followed up by similar work at other points. This field, which is more directly concerned with life histories, is practically unexplored and can be depended upon to furnish a wealth of new and valuable information.

Biological Survey, Washington, D. C.

GAME BIRDS OF THE HOOPER BAY REGION, ALASKA.

BY H. B. CONOVER.

Plates VI–VII.

DURING the spring and summer of 1924, Mr. H. W. Brandt of Cleveland, and myself, in cooperation with the U. S. Biological Survey, made a trip to the breeding grounds of the large wild-fowl, lying along the coast of Bering Sea south of the Yukon Delta. Our party consisted of the two above mentioned, O. J. Murie, Assistant Biologist of the Survey, and Frank Du Fresne, U. S. Government Fur Warden at Nome; also we had with us from late April until the last of June, Jack Warwick, Government Fur Warden at Flat. The Survey men were principally interested in photography, bird banding and a general survey of the region visited. Brandt was the oölogist of the party, spending most of his time making a large collection of eggs, while I was interested only in the game birds, especially in securing specimens of the downy young. Brandt and I arrived in Fairbanks the middle of March and there met Murie, who had preceded us by several weeks. Through his efforts everything was ready for an immediate start, and on the twentieth we left Nenana with two dog teams for the coast of Bering Sea. At Flat, which we reached early in April, Warwick joined the party, and a few days later at Russian Mission we were met by Du Fresne. Just below Mountain Village we left the river and cut southwest across the tundra to Point Dall, arriving April 28. There we were lucky enough to find Mr. and Mrs. Ebright, who were in charge of the native school. Classes having closed for the year, they very kindly turned the school room over to us for our headquarters.

Point Dall is about twenty miles long by about five wide. On its south side lies Hooper Bay and on its north Igiak Bay. Along the end of the point is a narrow line of low sandhills and back of this is flat tundra for a short distance and then low rolling hills with marshy valleys and ponds. Bordering the bays are mossy tidal flats. Our headquarters were about two miles from the end of the point. At the end of Igiak Bay, about twenty-five miles in an air line from the schoolhouse is a low range of mountains called

the Askinuk Range. This strip of mountains is about ten miles wide and runs east and west for about thirty miles. It does not reach an elevation of much more than two thousand feet. Back of Point Dall and Hooper Bay the country is low, flat tundra, covered with lakes and intersected everywhere by tidal rivers and sloughs. Here and there are a few isolated hills.

During May and June our party worked the country about headquarters at Point Dall. This was a wonderful place for nesting shore birds. Toward the end of June, Murie and Brandt made a week's trip to the head of Igiak Bay and the Askinuk Range. On their return about the twenty-sixth, Brandt left for home. On July 8 we moved headquarters to a motor scow, anchored in a river close to where the Askinuk Range touches Igiak Bay, and stayed there about a week. On July 17 we started into the interior with the motor scow. The plan was to travel up a small slough (the Kokechek River) which connected Igiak Bay with the Kashunuk River, then travel down the Kashunuk about fifty miles to where a branch of it entered Hooper Bay. The trip was made as planned, but on account of bad weather and a series of accidents which delayed us about six days, there was very little time for study of this region. A small Goose drive was finally organized, however. On August 8 we arrived back at the schoolhouse on Point Dall and the next day left for Nome.

A point especially noticed by all members of the party was the great destruction of eggs and young birds by natural enemies. Three species of Jaegers spent the greater part of their time hunting the tundra for eggs, also taking the young of the smaller birds. Gulls, especially the Glaucous Gull, many of which nested on the tundra, were very destructive to young Geese and Ducks. Du Fresne, who has made an especial study of the Snowy Owl, found that while there were eggs in the nest, the diet was mostly mice, but as soon as the young commenced hatching, many birds were killed.

The following notes pertain to the fifty species of game birds either collected or observed in this region. Thirty-four of these nested in the vicinity and the downy young of twenty-four of them were taken. The Black Turnstone and the Emperor Goose, so far as known to me, have not been taken previously in the downy stage.

Mergus serrator. RED-BREASTED MERGANSER.—This Duck made its first appearance May 11, when three drakes were seen flying along the coast. Ten days later it was common, but did not come into the tundra until May 26. It was not a common nester in this region. Only two nests were found by our party, the first on June 25. One of these, containing ten eggs, was situated on a grassy knoll about fifty feet from a tidal creek.

The weights of a male and female respectively were 2 lbs. 11 oz. and 1 lb. 14 oz.

Anas platyrhynchos. MALLARD.—On our trip to Fairbanks from Seattle, a flock of about a dozen was seen on a tidal creek near Seward on March 15, at which time snow covered the ground.

Mallards first put in their appearance at Point Dall on May 18. They were rare in the region where we were, and throughout May and June only occasional ones were seen, these mostly drakes. I believe fifteen or twenty miles back from the coast they would have been more plentiful. A nest was found on June 15. On July 14, a drake was collected which had just shed its primaries. It was in a bad state of molt, but still retained over half its nuptial plumage.

Mareca americana. BALDPATE.—Only a few straggling birds of this species were seen, and no nests were found. A pair was observed on May 25, and a flock of about eight drakes on June 28. One of these males was killed and found to be just starting to moult into its eclipse plumage.

A female weighed 1 lb. 13 oz.

Nettion carolinense. GREEN-WINGED TEAL.—This was a scarce bird around Hooper and Igiak Bay. A pair was shot on the coast May 14, but after that only an occasional odd bird was seen. Several nests were found, the first on June 1. Another found on June 6, with nine eggs in it, was destroyed by Jaegers. The middle of July a female was seen that acted as if she had young, but they could not be located. Probably this Teal would be found nesting much more plentifully farther inland.

Dafila acuta. PINTAIL.—The first Pintails noticed were seven flying along the edge of the sea on May 8. During the next week a few were seen each day and by May 18, they had become common. This was the only shoal water Duck nesting in this region in any numbers, but it was the most plentiful of all the different species of Anatidae found here. Pintails seemed to do a great deal of their courting on the wing, and it was a common sight to see one or two drakes chasing a duck about, as she dodged and circled through the air. In one evolution noticed the female suddenly made an almost perpendicular climb of about fifty feet, accompanying this maneuver by drawing her head back against her shoulders. At another time a female which had evidently left her nest to feed, was seen on the ground with three drakes in animated attendance. She would flutter along a few feet, only to be surrounded again immediately. From her actions the attention of the males did not seem very welcome. As late as June 23, drakes were still courting the females.

The first eggs were found on May 25, when two nests with two eggs and

three eggs, respectively, were located. By June 1, nests with their full complement of eight, nine or ten eggs were being found. The females made holes in the dry ground, generally out in the open, which they lined with blackish down. The nests were located almost anywhere, on dry spots in the marshy valleys close to the water, or on mossy hillsides at some distance from any pond. We were still finding nests with fairly fresh eggs up to July 10, but these late sets were always very small, averaging four or five. Evidently some of the females lay again if their first nests are destroyed.

The first newly hatched young, a brood of eight, were seen on June 22. In a few days they had become common sights. At times broods must become mixed, for on one occasion a female was seen with four young, three of which seemed to be about a week or ten days old, the fourth a newly hatched bird. This little fellow was hardly a third the size of the others, but was perfectly at home. The females are very good mothers, flopping and splashing around in an attempt to cover the retreat of their ducklings. By July 24, the young Pintails were about half grown and could take care of themselves so well that unless there were two or three men in the party, it was very difficult to catch them for banding.

On June 6 the first signs of the drakes flocking was observed. By the tenth parties of males were everywhere on the ponds. One was shot on the eleventh, but showed no signs of eclipse plumage, although the breast was full of small pin feathers. Another, killed on the fifteenth, had the upper breast brown and a scattering of brown feathers throughout the lower breast, abdomen, flanks and back. He was still with a female. The majority of the drakes had left the tundra around Point Dall, probably for the interior, by July 5, and what few were left appeared to be well into the eclipse plumage. On July 24 a drake in perfect eclipse, with the new primaries about a third grown, was killed. By August 1, the moult seemed to have been completed, as small flocks were seen flying about the tundra.

The weights of five males were respectively 1 lb. 15 oz., 1 lb. 13 oz., 1 lb. 14 oz., 1 lb. 14 oz., 2 lbs., 5 oz.; and two females respectively 1 lb. 13 oz., 1 lb. 14 oz.

Marila marila. GREATER SCAUP DUCK.—March 13, on the trip from Seattle to Seward, a few Scaup Ducks were seen feeding about the docks at Cordova, Alaska.

This bird first made its appearance at Point Dall on May 18, when about ten were seen flying along the coast. Three days later it was common. May 23 it was first seen about the ponds and creeks in the tundra. After May 27 it was the second commonest Duck in this region, being outnumbered only by the Pintail. On June 6, the first nest, containing nine eggs, was discovered. The female generally makes her nest on dry ground close to some pond or creek. Clutches of eggs averaged seven or eight.

By June 10, the drakes had evidently begun to leave the females, as small flocks composed exclusively of males started making their appearance. After the first of July, Scaup became scarce, as the females were sitting,

and the drakes had almost disappeared from the tundra. The first downy young, a brood of six, were seen on July 10. From then on the commonest ducklings seen about the ponds and rivers were of this species. When broods were encountered, the females seemed concerned, but not to the point where they endangered themselves greatly. Generally, when one approached, the mothers left their young, alighting on the nearest pond fifty or a hundred yards away.

Three adult females shot between May 25 and July 10 all had a white spot on the ear coverts. One had this mark clear white and the size of a dime. In the others this spot was specked with brown. I can find no reference to this marking in any of the standard works available. It seems, however, that it must either be due to a wearing of the feathers, or to a partial late spring moult. A male taken on July 3 showed no sign of changing into the eclipse plumage.

Weights of some of the specimens taken were as follows:—Three males, respectively, 2 lbs. 2 oz., 2 lbs. 1 oz., 2 lbs. 3 oz.; and of two females 2 lbs. 6 oz., 2 lbs. 15 oz.

Glaucionetta sp. GOLDEN-EYE.—On May 21, a few birds of this genus were seen on ponds in the tundra. No more were noticed until June 11, when five drakes, probably **americana**, were seen. They were very wild. On July 4, five more were seen.

Charitonetta albeola. BUFFLEHEAD.—On May 26, two females were seen on a pond close to the shore.

Clangula hyemalis. OLD-SQUAW.—This was the first duck to reach Point Dall in the spring. When our party made its first visit to the coast on May 2, this was the only Duck seen, about thirty-five flying by in half an hour. From that date until May 14, on all favorable days many were passing north, sometimes low over the water, often high in the air. While migrating, the drakes continually gave their musical call. The biggest flights were seen on May 7, 8 and 14. On May 9, there was a strong north to northwest wind and very few birds of any kind were migrating. Many Old-squaws, however, were sitting around on the open water, just off the shore ice, and we had an excellent opportunity to observe them. It was noticed that as they dove, they raised the wings, keeping the manus parallel with the body. From this action it would seem that they may use the wings in swimming under water. The males were very jealous, chasing away any others that came close to their hens. The drakes were in every stage of plumage, from the full summer dress to the winter. On May 7, seven were killed, three in not quite perfect summer plumage, four in practically full winter plumage. Five others, observed on May 9, consisted of one in winter plumage with few dark feathers on throat, one in full summer plumage and three in summer plumage with crown of head whitish; and other white feathers showing elsewhere. Females were generally in dark plumage, but some appeared very light colored.

By May 21 they began to be noticed about the tundra. The males were now courting assiduously. They would face the female, raise the tail

NEST OF EMPEROR GOOSE.

vertical to the body, draw the head in and raise the breast off the water until they were practically sitting on their tails. At one time three drakes and a duck were seen on the land by a pond. They would flop along dragging their bodies over the ground as if they were crippled and could not either fly or walk. This was kept up for several minutes, before they took to the water, where one drake appeared to conquer and soon drove away the other two. The pair that remained was very tame, and although the pond was not over twenty-five yards wide, they allowed us to walk up to the edge without showing any great concern. This Duck was a very common nester all over the region. The nests were generally located close to a pond, sometimes on the bank and other times twenty-five or thirty feet away. They were simply hollows in the ground, hidden in the grass and lined with down. The first eggs were found on June 5. Clutches ran from five to seven or eight. The drakes started flocking about June 25. Parties of fifty or more were seen on the larger ponds, often with one or two females intermixed, probably non-breeders. After July 10, males were hardly ever noticed, as they had evidently gone back to the sea.

The first downy young appeared on July 2. The females now became very solicitous, as the following experience will show. A brood of five was encountered, and desiring to collect them, with the help of an Eskimo boy I attempted to drive the young ashore in a narrow bay. This failed, so I began to shoot them. Every time one was killed the female would rush up and grab the downy with her bill. Shot after shot was fired, but the female refused to leave, until finally she was collected also. Despite this care for their young, the mortality among the ducklings must be very high, as later it became a common occurrence to see an Old-squaw swimming about with only one young following her. Many females without broods were about. Often these were in pairs, but sometimes singly.

Weights of those shot were as follows: Males 1 lb. 13 oz., 1 lb. 15 oz., 1 lb. 14 oz., 1 lb. 12 oz., 1 lb. 10 oz., 2 lbs. 2 oz., 1 lb. 10 oz., 1 lb. 10 oz., 1 lb. 14 oz., 1 lb. 15 oz.; and females 1 lb. 12 oz., 1 lb. 8 oz. and 1 lb. 9 oz.

Histrionicus histrionicus. HARLEQUIN DUCK.—This Duck was only recorded twice at Point Dall. On May 19, Du Fresne saw and collected a single male, and two days later another male was brought in by an Eskimo. On August 26, while the steamer was stopping at False Pass, Alaska Peninsula, about thirty Harlequins were seen. They were in the vicinity of a stranded whale and may have been feeding on it. One bird was noticed that still lacked the use of its wings.

A male shot weighed 1 lb. 9 oz.

Polysticta stelleri. STELLER'S EIDER.—This was the last of the Eiders to make its appearance, although it became common before the Spectacled Eider arrived in any abundance. It was first seen on May 18, when about forty were observed in small flocks of from six to eight. The next day about the same number was seen, and after that it became common. Their flight is very much swifter than that of the other Eiders, and if a flock is

shot into, the birds twist and turn like Scaups; in fact except for the coloration of the drake, their appearance is very unlike Eiders. By May 23, a few were flying about the ponds in the tundra and by May 27 they had become common. One flock which was watched was seen to be feeding on some variety of water grass, tipping up for it in the shallow water like Mallards. These Ducks by now had become very tame.

This was the only species of Eider of which the immatures were seen in any numbers. On June 4, two immature drakes were noticed on a pond with two pairs of mated adults. They were watched through field glasses and it was noticed that the adult drakes were very jealous of the youngsters, driving them off whenever they approached the females. The young drakes were not seen to take any interest in the females, however. No more immatures were noticed until July 1, when three females were shot. After that both ducks and drakes were seen occasionally about the tundra. The young females appear quite different from the adults, being slightly lighter colored and lacking the blue speculum. Two drakes, shot on June 4, differ quite widely in the amount of adult plumage they possess. One is in the brown plumage except for a mottling of white on the upper breast. The other has the head grayish, a tuft of slightly greenish feathers on the back of the head, and bright metallic blue scapulars. Whether this difference is due to age or individual variation is hard to say. On July 3, an adult drake was collected which had started to moult into the eclipse plumage. It had not as yet commenced to change the body feathers, but the head and neck were more than half moulted. After about July 10, very few drakes were seen about the tundra.

Very few were found nesting about Point Dall, but, like the Spectacled Eiders, they bred commonly on the flats of Igiak Bay. Generally the nest was placed on or near the edge of a pond. The females were very tame. One driven from her eggs which were about to hatch stayed within ten feet, clucking and fussing about while photographs were being taken. The first eggs were found June 19, and downy young were seen July 8.

Weights of specimens taken are as follows:—5 adult males, 1 lb. 15 oz., 2 lbs., 1 lb. 14 oz., 1 lb. 15 oz., 1 lb. 15 oz.; 5 adult females, 2 lbs., 1 lb. 14 oz., 2 lbs. 2 oz., 1 lb. 15 oz., 1 lb. 14 oz.; 4 immature males, 1 lb. 14 oz., 1 lb. 11 oz., 1 lb. 11 oz., 1 lb. 11 oz.

Arctonetta fischeri. SPECTACLED EIDER.—First seen on May 5, when an Eskimo brought in a pair he had shot. No more appeared until May 12, when five were seen flying along the coast. From that time on, pairs or small flocks were seen every day or so, but it was not until May 21, that any flight occurred. On that day quite a number of these birds passed. The next day many flocks were flying about the tundra. On May 23, another little flight of Spectacled Eiders occurred, and again we noticed, as we had on the 21st, that almost all the birds seemed to come from the north, and passing Point Dall, entered Hooper Bay. The flights of the other three species had all approached the Point from the south. Undoubtedly the flocks we saw were composed entirely of birds that were coming to nest

in the immediate vicinity, but their arrival from the north suggests that they may winter in some part of northern Bering Sea.

They did not nest commonly on Point Dall, but were abundant nesters on the flats about Igiak Bay. The first eggs were found on June 13. The nests were built generally close to the shore of some pond. The females were very solicitous and very tame. Murie saw one that he had just driven off her nest fly up immediately and cover her eggs when she noticed a Jaeger approach, although Murie had not gone over fifty yards from the nest.

With the exception of one immature female taken by Murie on June 6, only adult birds were seen. This bird was considerably smaller and much lighter colored than the adults. A male taken June 28 was just starting into eclipse. Another taken July 4 was much more advanced in its moult. After this latter date males were conspicuous by their absence.

Young were first seen on July 8, but they were evidently several days old. Broods of this Duck soon became common. Twice two females were seen with one brood, the first of four and the second of nine ducklings. In both cases all the young seemed to be of the same size, and it was impossible to tell whether two broods were mixed together or whether all belonged to one female. Both old ones showed great anxiety, and while one stayed with the young, the other would flap about wildly, finally coming ashore in an attempt to lead me off.

The large Glaucous Gulls probably do great damage to the young of this bird. An experience that I had one day strengthened this belief. I had come to a pond where there was an old Spectacled Eider with three young. As I was watching them, I noticed that two pairs of the large Gulls were nesting around this same pond. One of these Gulls was shot, dropping into the water near the old Duck. She immediately left her brood and fluttered toward the Gull, calling excitedly. At first she was very cautious, staying several feet away from it, but finally gathering courage she dashed at the dead bird, jumped over it, and as she did so, made a half-hearted peck at the carcass. This was repeated again and again. Liking her courage, I decided to help her family, so shot the remaining Gulls. The female became almost beside herself with anxiety, and when I left, was dashing from one dead Gull to the other.

The weights of eight males were respectively, 3 lbs. 3 oz., 3 lbs. 8 oz., 3 lbs. 11 oz., 3 lbs. 10 oz., 3 lbs. 12 oz., 3 lbs. 5 oz., 3 lbs. 7 oz. and 3 lbs. 11 oz.; four females, 3 lbs. 14 oz., 3 lbs. 6 oz., 3 lbs. 14 oz., 3 lbs. 8 oz. An immature female weighed 2 lbs. 11 oz.

Somateria v-nigra. PACIFIC EIDER.—On May 4 a few Eiders were seen flying north, but the only ones identified were King Eiders. On May 6 many Pacific Eiders were passing. Flocks contained from three to thirty birds. This species was never seen in such large flocks as the King Eider. They seemed to like to fly close to the edge of the shore ice. Flocks would first be noticed coming across the open water at the mouth of Hooper Bay. As they struck Point Dall, the birds would often swing

inshore until they reached the ice on the edge of the open water, when they would turn and follow this north. Males seemed to predominate. The only note we heard them utter was similar to the call of the King Eider, "Urr Urr."

On May 8 there was a large flight of Pacific and King Eiders. Flocks of the former often had from one to six of the latter species mixed in with them, but flocks of King Eiders never were seen with Pacific Eiders among them. This, however, was the only day when mixed flocks were noticed. On May 9, not over fifty were seen in three to four hours' watching. This was the day of a strong northwest wind, during which there was very little migration of any sort. On May 11, a big flight of King Eiders passed, but very few of this species were seen. The following day, however, both kinds were passing in large numbers. About twenty per cent of the flight were Pacific Eiders, we estimated. Probably three to four thousand were seen in six hours. May 14 and 15, a few passed. From then on, only a few were seen each day. On May 18, two immature males were seen passing north. They were the only ones noticed on the trip. By May 21, the migration was over. On that day a few were seen flying up and down the coast. They were also noticed for the first time flying about the ponds in the tundra.

May 28, the first nest was discovered, and on June 28, the first downy young were seen, a brood of six, a day or two old, found in a very small pond back in the low hills. At my approach the female flopped over the water despairingly, but when I fired at one of the young, she left the vicinity immediately. The downies could dive very well, and in half a minute no sign of life appeared on the surface of the pond. Walking carefully along the shore, a young bird was soon discovered flattened out in the grass at the water's edge. It made no effort to escape as I bent over, evidently thinking itself well hidden. Following around the entire shore line of the pond, the entire brood was soon captured. That the female of this species may not make a very devoted mother, seems borne out by another instance. On June 29, Murie found a nest with three young and two eggs. When the nest was visited again June 30, the female had left with the three young already hatched, although the remaining two eggs were pipped and the young still alive in them.

Of the three species of Eider nesting in the vicinity of Igiak and Hooper Bay, this bird was the rarest, although during the early migration it was the second in abundance of the four Eiders, being outnumbered only by the King Eiders.

A female, taken on July 17, had her entire stomach and neck filled with black mussels from one to two inches long.

Weights of specimens taken ran as follows: Seven males, 6 lbs., 6 lbs. 1 oz., 6 lbs. 1 oz., 5 lbs. 11 oz., 5 lbs. 6 oz., 5 lbs. 1 oz. and 6 lbs. 3 oz.; four females, 5 lbs. 6 oz., 4 lbs. 11 oz., 5 lbs. 6 oz. and 6 lbs. 6 oz.

Somateria spectabilis.[1] KING EIDER.—This species was seen only in migration, but it passed Point Dall in countless thousands from May 4 to May 26. The greatest flights were on May 11, 12, and 15. The best idea of this migration perhaps can be given by direct transcripts from my notes on the species made at the time. Unfortunately every day was not covered, as some days had to be given over to the preparation of specimens.

"May 4. Three killed by Murie to-day from a kayak in the open lane of water along shore. From 2:30 to 5:30 P. M. he and I probably saw 250 Eiders pass, flying north. They kept well out from the shore ice, as the open lane was full of floating cakes and small bergs. Majority of the Eiders seen were King, the rest Pacific. One lone drake King Eider was seen passing in a flock of Old-squaws. The birds flew low over the ice and water. Flocks contained both sexes, but males seemed to predominate.

"May 6. Saw one flock of about thirty to-day and a few others. Many Pacific Eiders passing. Both species give a low grating call "Urr Urr" as they are flying by. The King Eiders seem to go in much larger flocks than the Pacific. Yesterday Du Fresne saw a flock containing several hundred.

"May 8. Quite a number passing to-day. There are often one to six King Eiders mixed in with a flock of Pacifics. Largest flock to-day contained about 30 or 40 birds. They are much shyer of the shore ice than the Pacific Eider, keeping well out of gun range as a general rule. The square knob on the bill of the drake shows up very prominently as they pass.

"May 9. Only about forty seen to-day in three to four hours' watching. No migration of anything to speak of. Strong northwest wind blowing.

"May 11. A large migration of King Eiders was on to-day, but very few Pacifics were seen. In six hours' watching we decided that, even putting the estimate so low that there could be no chance of exaggeration, between ten and fifteen thousand of these Ducks passed by Point Dall. Some flocks must have contained six or seven hundred birds. The birds are mated, as a male left a flock and came back to a female that had been shot. An Eskimo told us that the yellow knob on the male's bill was "all the same seal oil" and was good food for the baby.

"May 12. The migration still going on as strong as ever. Saw about the same number as yesterday. A few more Pacifics passed and five Spectacled Eiders were seen.

"May 14. Only a few passed to-day.

"May 15. Last night after supper we noticed some large flocks of Eiders were flying into Hooper Bay, then swinging north and flying out to sea again by crossing the tundra just back of the end of the point. We

[1] Records for the interior seem to be very rare, so it may be well to note here that on Oct. 7, 1920, a young male of the year was taken by myself on Marsh Lake, Yukon Territory. It was found with a flock of Scoters.

were too far away to identify them, but this morning flocks were still doing the same thing. They proved to be King Eiders. Flocks contained from two to five hundred birds. Esitmated low as before and decided at least twenty thousand had passed in about six hours. Whether the migration was on all night we do not know. There was a strong inshore wind. Birds flying across Point inland and also along coast. It was a wonderful sight. Four immature males seen to-day in different flocks. Up to to-day the drakes have all been adults.

"May 16. Only two or three fair-sized flocks seen to-day in two and a half hours at the shore. Very few birds of any kind flying.

"May 18. About fifteen big flocks passed to-day. From three to five hundred in a flock.

"May 19. One flock of about one hundred and a few odd birds seen to-day.

"May 21. One flock and a pair passed to-day.

"May 23. A couple of flocks of about twenty each flew by Point to-day. They seemed to be all immatures.

"May 26. Saw flock of about thirty and two single pairs to-day along coast.

* * *

"Aug. 9. To-day as we were sailing toward St. Michael's, a flock of about fifty Eiders passed the boat. They were in very mottled plumage, but appeared to be Kings. Flock was headed south."

The weights of some of the specimens collected were as follows:—12 males, respectively, 4 lbs. 1 oz., 4 lbs. 1 oz., 3 lbs. 14 oz., 4 lbs. 6 oz., 4 lbs. 4 oz., 4 lbs. 7 oz., 3 lbs. 12 oz., 4 lbs. 3 oz., 4 lbs., 3 lbs. 11 oz., 4 lbs. 3 oz., 4 lbs. 2 oz.; six females respectively 4 lbs., 4 lbs. 2 oz., 4 lbs. 1 oz., 3 lbs. 5 oz., 3 lbs. 12 oz. and 4 lbs. 1 oz.

Oidemia americana. AMERICAN SCOTER.—On the voyage from Seattle to Seward this Scoter was seen commonly between Vancouver Island and Cordova from March 3 to 11.

It was first seen at Point Dall on May 18, and by May 20 was common. At this time it kept to the sea coast, but by May 26 was seen in numbers on the ponds in the tundra. On being flushed the drake would give a low whistling peep repeated over and over. This presumably was a mating call, as a drake was heard giving it as he sat undisturbed with a Duck on the water. It has another very low note, a sort of whistling "wheu."

This was a common nesting bird all through the marshes back of Igiak and Hooper Bay. It was the latest of the wildfowl to nest. The first eggs were found on June 23 and the first downy young, a brood of eight, were seen on July 16. One nest which we found was situated in some short grass about three hundred yards back from the sea beach. The eggs were of a beautiful pinkish color, very different from those of the other Ducks nesting about Hooper Bay. A drake shot on the fifth of July showed no signs as yet of going into eclipse. Pairs were still to be seen sitting around the ponds, presumably late nesting birds. A week later the drakes had all left the tundra.

Four males weighed respectively 2 lbs. 9 oz., 2 lbs. 13 oz., 2 lbs. 8 oz. and 2 lbs. 8 oz. A female weighed 2 lbs. 7 oz.

Oidemia deglandi. WHITE-WINGED SCOTER.—Although seen commonly from the steamer all the way from Vancouver to Cordova the first part of March, this Duck was only seen once at Point Dall, when on March 18 a flock of about ten passed.

Oidemia perspicillata. SURF SCOTER.—A very scarce bird at Point Dall. Two pairs were seen on May 21, and on May 29, an Eskimo brought in a male he had shot.

The weight of the male was 2 lbs. 8 oz.

Anser albifrons gambeli. WHITE-FRONTED GOOSE.—First seen on May 8, when a single Goose which passed as we were watching the Eider flight was identified as of this species. It was flying at the end of a small flock of Pacific Eiders. On May 10 a single immature male was shot, which was in the company of a Cackling Goose. During the next few days, singles, pairs and small flocks were seen until by the middle of the month this Goose had become common.

This species was a common nester about Point Dall and the head of Igiak Bay, but seemed to prefer the higher ground rather than the low, marshy tundra. Of three nests which the writer saw, all were situated in the small hills. Two were located on a dry hillside while the third was placed on top of a large tussock situated in a marshy spot on the hilltops. The gander was always a close attendant on the goose, generally being found near the nest and never over seventy-five yards away. When any one approached, they usually stretched out flat, and unless stumbled upon accidentally, the nest was very hard to discover. Clutches ran from five to seven. The first eggs were found on May 25, when a nest with two eggs was discovered by Murie and Du Fresne. The nest was closely watched by them, and the following data on the laying and incubation period were secured. On May 25 the nest contained 2 eggs, on the 27th 3, the 29th 4, the 31st 6 and June 1st 7 eggs, the full clutch. On the morning of June 24 all seven eggs were hatched, but the young were still in the nest. For some reason the families of White-fronted Geese did not mingle with the broods of Cackling and Emperor Geese which were common along the rivers and sloughs the first few weeks in July, but kept back on the tundra about the ponds and marshy places.

I believe this Goose sheds its primaries earlier than the others. On July 14, when the Cackling and Emperor Geese seen still seemed to have full power of flight, a family of this species was found of which the female had already shed her primaries, and the male on being collected was discovered to be in such condition that he would have been flightless within twenty-four to forty-eight hours.

Shortly after the middle of July, our party left the coast and travelled inland for a short trip. It was noticed that after we had gone a few miles inland, no more White-fronted Geese were seen. It may be that in the district we were in, this species restricts its nesting to the immediate

vicinity of Bering Sea, where the ground is slightly hilly, and does not like the flatter tundra. That it does not consort with the other Geese at this season seems certain, as among the approximately two hundred Geese taken in a drive by the Eskimos, not one of this species was found.

Weights of some were as follows:—Two adult males, 5 lbs. 3 oz., 5 lbs. 8 oz. (ready to molt); two immature males, 5 lbs., and 5 lbs. 6 oz.; one immature female, 4 lbs. 10 oz.; an adult female (shot off nest) 4 lbs. 5 oz. Two unsexed birds weighed 4 lbs. 11 oz. and 4 lbs. 13 oz.

According to the above weights the breeding White-fronted Goose found at Hooper Bay should belong to the smaller race, *A. a. albifrons* as classified by Swarth and Bryant (Univ. Calif. Pubs. Zool. v. 1. 17 p. 209). However, from the three specimens available at the present time, the writer could come to no decision as to the two races. According to the weights and some measurements, my specimens belong to the smaller race, but other measurements and in one case the color of the eyelid place them as members of the larger race.

Below are given the data and measurements of each specimen:—

1. Immature, non-breeding male taken May 10, weight 5 lbs., color of eyelid not noted. Culmen 51, wing 419, tarsus 82, middle toe without claw 75.

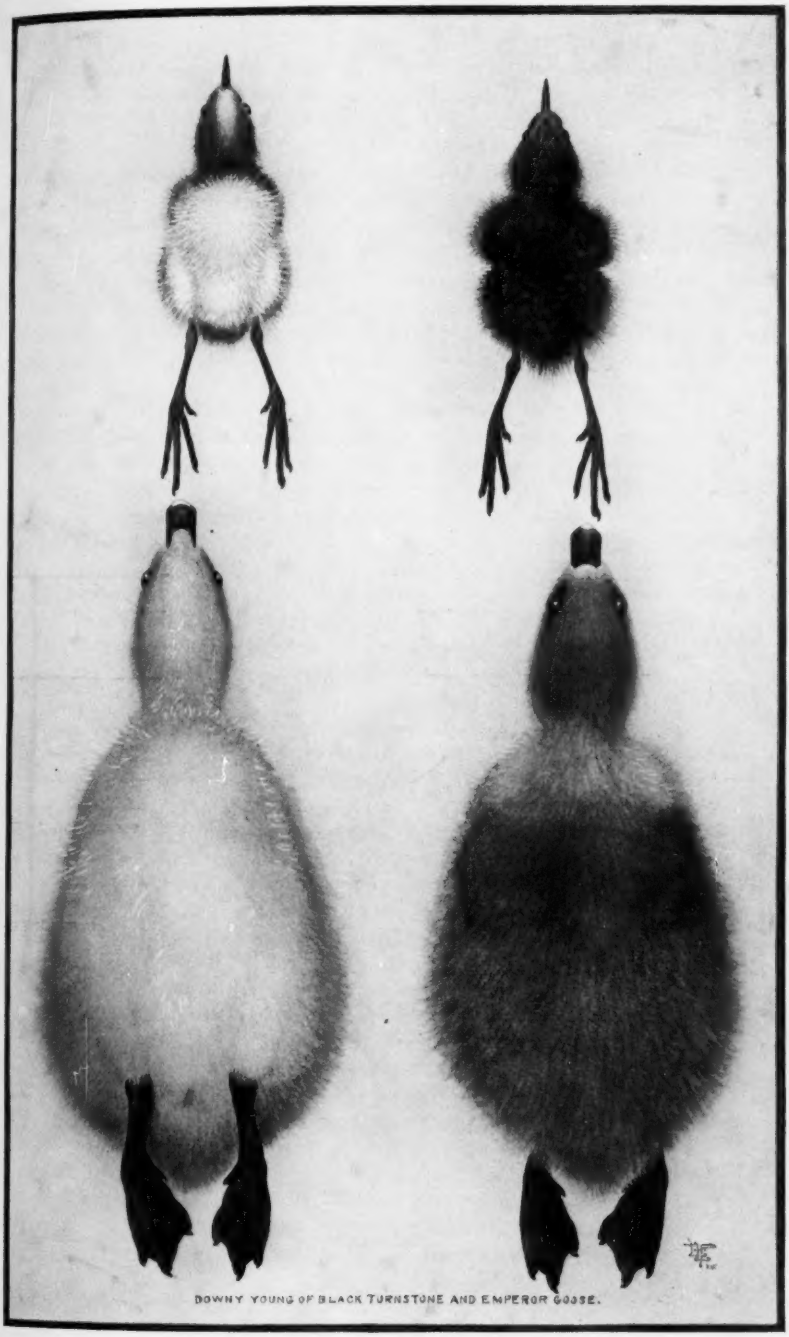
2. Adult female, shot off nest June 18, weight 4 lbs. 5 oz., color of eyelid not noted. Culmen 46, wing 409, tarsus 70, middle toe without claw 68.

3. Adult male, shot July 14, found with brood of young, weight 5 lbs. 8 oz.; eyelid yellow. Bird was about to moult primaries. Culmen 53, wing 452, tarsus 82, middle toe without claw 75.

Branta canadensis hutchinsi. HUTCHINS' GOOSE.—One specimen of this Goose was taken on May 23. From the size of its testicles, it was evidently an immature, non-breeding bird. It is much lighter colored on the breast than specimens of the Cacklers taken in the same region. Compared with a breeding male of *minima* it is larger, with a considerably heavier bill. Its dimensions are as follows: culmen 40 mm.; wing 398 mm.; tarsus 78 mm.; middle toe with claw 80 mm. The weight was 4 lbs. 6 oz.

About the middle of June, while collecting on the flats about Igiak Bay, Brandt took a set of eggs of the *canadensis* group which proved on comparison to be much larger than other sets of *minima*. Unfortunately the old birds were not collected. This set may have been eggs of *hutchinsi*.

Our work with the Geese of this group was very unsatisfactory. They were not found nesting about Point Dall, and it was not until we visited Igiak Bay later in the season, by which time the young were all hatched, that we met with them on their breeding grounds. The Eskimos, however, recognize the difference between *hutchinsi* and *minima* and have different names for the two. According to their story the larger one nests more in the interior. This was also borne out by a quarter-breed, Peterson, who has lived all his life in this tundra district about seventy miles back from the coast. He claimed that both Geese nested commonly in the district where he lived, but that the larger one was the most numerous. A thor-



DOWNY YOUNG OF BLACK TURNSTONE AND EMPEROR GOOSE

ough survey of the breeding Geese of this territory would undoubtedly go far toward settling the status of the two. Personally the writer tends to agree with Major Brooks (Condor, 1913, p. 123) in believing *minima* to be a distinct species.

Branta canadensis minima. CACKLING GOOSE.—The first Cackling Geese were seen on May 8, and by the middle of the month they had arrived in full force. During the last half of May, singles, pairs and flocks of three or four were seen commonly, wandering aimlessly about the tundra, as if looking for company. Those shot all proved to be immature, non-breeding birds. They were very tame, coming to almost any kind of call. Probably they had been driven out of the flock on arrival at the breeding grounds by the older mated birds. Twice a single Cackler was seen in company with a White-fronted Goose. After having seen the same birds in their winter haunts, I found the gullibleness of these Geese on their arrival in the north almost beyond belief. The Eskimos are very adept at calling them. They often wave their caps to attract the birds' attention at the same time imitating their call "Kaluk, Kaluk." When the Geese approach the note is changed to a sort of low cluck. Once two of us witnessed a group of four or five Eskimo children as they called up a single Goose, and although shot at two or three times with bows and arrows, it repeatedly returned. At another time a Goose was passing over Murie, who was walking about forty yards from me. I called loudly to attract his attention, pointing above his head, when to my surprise the Goose suddenly swung, dipped toward the ground and circled around me about twenty yards away.

For some reason the Hooper Bay side of Point Dall was not used as a breeding ground, although this species nested commonly on the flats about Igiak Bay to the north and on the tundra back of Hooper Bay. The first nest was found on June 3. I did not myself visit the breeding grounds of this bird before the young were hatched, but from information supplied by Murie and Brandt, the nests were generally placed on some little islet in the ponds. Sets averaged about five eggs each. By July 8 when headquarters were moved from the tip of Point Dall to Igiak Bay, most of the young of these Geese were a week or two old. On July 14, however, a newly hatched brood of four young was found and collected with the two adults. In all pairs of these Geese seen, it was very noticeable that the gander was much larger than the goose. It would seem that this difference in size between the sexes as well as that of age should be taken into account in studying the *canadensis* group.

The enemies these Geese have to contend with are numerous. Three species of Jaegers prey on their eggs, although probably the Geese suffer much less from these thieves than do the smaller species, who are less vigilant in protecting their nests. The large Glaucous Gull, however, is very destructive to the young. In travelling up the sloughs and rivers with our boat, we would often encounter family parties of these birds. Immediately the old birds took to flight, the large Gulls would appear,

and, given half an opportunity, kill the goslings. This was especially noticeable when, in trying to band the young, we would chase them ashore. Often after banding a brood, we would have to wage war on the Gulls to save the goslings from destruction. Snowy Owls, which were common nesters in this vicinity, also took their toll. One afternoon an hour or so after banding a brood of young Geese, Murie found two of them beside the nest of one of these Owls.

On July 30, we reached a small Eskimo village situated on the Kashunuk Slough about twenty-five miles inland from Hooper Bay. Here we organized a small Goose drive, as our time was getting short and we wished to band as many Geese as possible. The next day, taking along about twenty Eskimos, we ran up the slough a few miles to where a smaller river came into it. Here at the tip of this wide V of land, the natives set up a net in the shape of a pocket with the sides about twenty feet long. While this was being done, a dozen of the younger men started out to drive in the Geese. They left in pairs at about five minute intervals, one following the bank of the Kashunuk Slough, the other the bank of the tributary. In about half an hour all were out of sight. Almost two hours later we saw in the distance the line of returning natives. Evidently they had gone some distance along the sides of the V formed by the two rivers, and then cutting inland and forming a line across the mouth, had marched toward the net. When they were still four or five hundred yards off, we began to see the Geese walking along ahead of them, so at the orders of the older Eskimos who had stayed with us, we formed two human wings out from the sides of the net. Soon the Geese were near, and we could see stalking majestically in their midst a half-grown Little Brown Crane. He seemed to have no fear and was entirely unruffled by the excited behavior of the Geese. When the line of drivers had gotten within about a hundred yards the fun began. Geese were everywhere trying to break through the line, and often succeeding. If one got past it was waste of effort to chase him, as meanwhile a dozen would escape through the break left in the line. Even after the birds were inside the net, the excitement still continued, as the mesh was very large and by struggling a Goose could force its way through. This was soon remedied by spreading a piece of canvas around the net, but not before the calm and collected crane had twice gone through like a slippery eel. After the birds were securely penned, the natives took the adult Geese for food, according to our agreement with them; while the members of our party, each with an Eskimo assistant to hold the birds, commenced banding. One hundred and thirty-five half-grown Geese were banded, about three-fifths of which were Cackling, the remainder being Emperor Geese. The natives secured between thirty-five and forty adults. All these were examined, but no *hutchinsi* were found among them.

Dr. Nelson in his 'Report upon Natural History Collections made in Alaska' 1887, speaks of the first plumage of this Goose as follows:—"Head and neck almost uniform with the rest of the body and without any trace

of the white cheek-patches." A young male taken as a specimen in the above drive, and which has the primaries about two-thirds grown, has the head and neck black and the white cheek-patches as in the adult, although the latter are slightly speckled and lined with black. The under parts, however, are much grayer than in the adult, but the upper breast, just below the black neck, has the typical brownish tinge of *minima*. It may be that some of the so-called intermediates in color between *hutchinsi* and *minima* are young birds in their first fall and winter plumage.

Measurements of a pair of breeding *minima* with typical deep brownish breasts are as follows: ♂ culmen 33, wing 401, tarsus 72, middle toe with claw 64; ♀ culmen 31, wing 361, tarsus 62, middle toe with claw 61. These birds were taken with newly hatched young and weighed: ♂ 3 lbs. 12 oz., ♀ 2 lbs. 8 oz. A typical dark-breasted immature non-breeding ♀ taken May 18 weighed 3 lbs. 2 oz., and its measurements are as follows: culmen 27, wing 350, tarsus 61, middle toe with claw 61.

Weights of other Cackling Geese shot for food were, males 3 lbs. 6 oz. (im), 3 lbs. 8 oz., 3 lbs. 4 oz., 3 lbs. 12 oz., 4 lbs. 2 oz.; female 3 lbs. 2 oz.

Branta nigricans. BLACK BRANT.—The main flight of this Goose evidently passed farther inland than our camp at the tip of Point Dall. Probably in their migration they cut across the base of this Point. While a number of these birds were seen, they were not nearly as plentiful as we had been led to expect they would be. The first appeared on May 20. After that some were seen every day until May 29, when a little flight seemed to be on. The flocks did not follow the sea coast, but cut across the tundra almost anywhere, having no regular line of flight that we could see. They flew high and very steadily. No notes were heard. From May 30 to June 9 small flocks were seen nearly every day, either travelling or feeding in Hooper Bay. On the last day three were noticed, the last to be seen. Of the five specimens taken, all were adults, except one immature bird shot June 6.

Weights of four of these birds were as follows: Three adult birds 3 lbs. 4 oz., 3 lbs. 10 oz., 4 lbs. 14 oz.; and of an immature male 2 lbs. 14 oz.

Philacte canagica. EMPEROR GOOSE.—The first Emperor Goose seen by our party was on May 15, when a single bird was noticed flying along the coast. Five days later two more appeared and from then on they became common. Up to June 5, the majority of these Geese seen seemed to be birds preparing to nest in the vicinity, as they were in pairs or small parties, flying low about the tundra. On the above date, however, quite a large flight of Emperors passed over high on their way to the north. The following day a few more flocks went by. No more of any consequence were noticed until June 10, when several bands were seen migrating through, and the next day there was again quite a flight. On June 18 another flight seemed to be starting, as three or four flocks were seen passing overhead. This last migration was at its height on the next day, June 19, when about a dozen flocks, varying from fifteen to forty, went by. During the next two days a few more flocks passed, but after June 23, none but local birds

were seen. As far as could be judged through powerful binoculars, these late migrating Geese were adults, and it may be that the birds nesting farther north do not leave their wintering grounds until much later than the more southern breeding birds.

These Geese lose very little time in starting to nest after their arrival on the breeding ground, as on May 27 a female was shot that already had her breast partly picked. The first eggs were not found, however, until June 2. Sets seemed to run between five and seven in number, but six was the highest found by our party. About Point Dall they seemed to prefer as nesting sites the inland ponds and marshes situated in the low rolling hills, rather than the marshy flats bordering the bay and sea. Nests were generally placed close to water, either near the bank of some pond, on an island, or on the top of a large tussock in some wet, marshy place. They were lined with moss, grass and down from the parent. The females sat very close, generally not flushing until one was within ten or fifteen feet. The surprising thing, however, was in not finding the gander in close attendance. At first it was thought that the male probably took little interest in the nest, but this was found not to be entirely correct. At one nest, situated on an island in a pond, what was presumably the gander was seen several times sneaking about several hundred yards away. In another case when a female was disturbed from her eggs, she was joined by two other Geese when she lit some way off. One of these, thought to be her mate, kept constantly with her, while the other stayed some little distance away. As there was another Emperor nest less than a quarter of a mile off, it was presumed that the odd bird was also a gander and mate to this other hen. As soon as the young are hatched, the male joins his mate, however, and helps take care of the goslings. In all broods seen about the sloughs and rivers later in the summer, two adult Geese were always present. One morning on visiting the nest on the island above referred to, the first thing that caught our eye was a newly hatched chick sitting on the edge of the nest beside its mother. As we drew closer the female flushed, and with her went the gander, who had evidently been crouched on the ground about ten feet away. All five eggs had hatched and the young were already dry. The goslings were surprisingly tame, making no attempt to leave the nest, although both old birds had lit in the lake about fifty yards away and the hen was calling loudly. After a few minutes they did crawl out, but to our surprise came to us as we stood photographing them, utterly ignoring the old Geese. Du Fresne, wishing to get photographs of the adults, took one of the young and placed it some distance from the nest as a decoy. The minute he backed away, however, it started in pursuit of him, so that finally he had to tether it by the foot to a bunch of grass. Meanwhile the other four seemed perfectly content to sit in my lap, where they were sheltered from the wind; and if I covered them with my hands, would snuggle down and give contented little chucking calls. We had these five for two days and they fed readily on finely cut grass and hard boiled egg. They became so that when the

cover of their coop was lifted, all would stretch up their heads and peep for food.

The following data on the incubation period were obtained: Nest found June 4 with five eggs (full set). On the morning of June 29, three eggs had hatched, one egg was infertile, and the other had a fully developed chick in it, but the yolk sack had not as yet been drawn into the body. One gosling escaped into the lake with the female, when she was disturbed, but in about ten minutes she brought it ashore and commenced to brood. Evidently when very young they cannot remain long in the water without getting chilled. So solicitous was she of this chick, that by sneaking quietly toward her, it was easily captured.

During the first half of July, broods of these Geese were seen commonly back of Igiak and Hooper Bay. When the young are first hatched, the old birds appear to take them to the rivers and sloughs up and down which they travel feeding on the banks. It was during this period that we noticed how the Glaucous Gulls persecuted them. Whenever a brood was encountered as we travelled the sloughs in our boat, the old Geese would fly off and the goslings would scatter. Immediately these big Gulls gathered, and as soon as a chance offered, would swoop down on a young one. Later when we attempted to band these Geese, this was a serious handicap, as necessarily broods became much scattered and were at the mercy of marauders. Under natural conditions many goslings must be destroyed, as often the old Geese were seen at some distance from their young; and wherever there was a brood, there was almost sure to be a Gull or two hanging about. When the young became partly grown and the adults are about to moult their primaries, the broods retire from the river banks into the tundra. During the latter part of July, very few Geese of any kind were seen as we travelled along the Kashunuk Slough. Just prior to this time the Geese gather in bands, which are generally a mixture of Emperors and Cacklers, the White-fronted Geese seeming to keep aloof from the two other species.

From what evidence we could gather, it would seem that the Emperor Goose never nests farther back than ten miles or so from the coast. As the majority of Eskimo villages in this region are situated near the coast, it is this species that suffers most in their Goose drives. Generally the natives go to the same spot each year for their drives, which are made about the end of the first week in August.

A young bird about two-thirds grown, taken on the second of August, shows no signs of the white head and neck, but has the feathers of these parts dark gray. In this stage the bill is black, iris brown, and legs and feet olive brown. An immature female shot May 30 has very worn plumage. The head and neck are white as in the adult, but there are black feathers scattered through the white of the cheeks; and in front of the eye there is a dusky spot about the size of a five cent piece, in which are mixed a few white feathers. The back is much duller than in the adult and the breast is a dirty yellowish gray. The coloring of the soft parts is the same as in

the adults, the iris being brown, legs orange, and bill in general bluish white.

So far as the writer knows, the only description of the downy young of this species is a very brief and general one by F. E. Blaauw (Ibis, 1916, p. 252) based on a chick hatched in his aviary. Therefore below is given a description of a gosling about thirty-six hours old in my collection. Names of the gray tints are according to Ridgway's 'Color Standards'.

Upper parts from mouse gray to deep mouse gray, slightly lighter on upper forehead, crown, occiput and cheeks; lower forehead at base of bill narrowly clear white. Nape and sides of neck noticeably lighter than back. Flanks and under side of tail deep mouse gray shading into the white of lower breast and abdomen. Throat and upper neck white. Lower neck and upper breast white with slight grayish tinge. Bill black with extreme tip of both mandibles white. Legs and feet olive.

The strong, rank odor of these Geese spoken of by other writers was not noticed among the birds we took. Many of them were eaten and not found at all unpalatable.

Weights of five males taken were 6 lbs. 12 oz., 5 lbs. 8 oz., 6 lbs. 2 oz., 5 lbs. 10 oz. and 6 lbs. 10 oz. Six females weighed 6 lbs. 10 oz., 6 lbs. 5 oz., 4 lbs. 10 oz. (im.), 5 lbs. 2 oz., 6 lbs. 14 oz. and 5 lbs. 3 oz. (im.). Two unsexed immature birds weighed 4 lbs. 13 oz. and 4 lbs. 14 oz.

Olor columbianus. WHISTLING SWAN.—The first birds seen appeared on May 8, a group of four passing overhead. Twelve were seen the next day, and two the day after. From then on, only an occasional straggler made its appearance. We did not get into the nesting grounds of this Swan until late in the summer, so very little was observed. It seems to prefer the interior of the tundra, not nesting within ten miles of the coast. On July 26 and 27, while travelling along the Kashunuk Slough in a motor scow, a few Swans were encountered. Several were seen that could not fly, besides a pair with young, one of the adults of which still had the use of its wings. On one of these days, encountering two flightless birds, we gave chase with the boat. After a few hundred yards the two separated, and the bird which we followed soon showed signs of distress, flopping over the water with its mouth open. A hundred yards or so more and it took to the bank, where Du Fresne soon ran it down. It was an adult, with no signs of the new primaries as yet showing. A band was placed on its leg and it was released.

(*To be concluded.*)

ON A NEW FORM OF LUSCINIA DAVIDI (OUSTALET) FROM THE LI KIANG MTS., YUNNAN, CHINA.

BY PROF. PETER P. SUSHKIN, HON. MEMB. A.O.U.

DURING my studies in the U. S. National Museum in 1925, I had the opportunity of examining a fine series of "*Calliope*" *davidi* Oustalet, consisting of 5 adult males, 1 female and 1 bird in the nestling plumage, which were collected by Dr. J. F. Rock in the Li Kiang Mts., in July 1923. By the courtesy of the authorities of the Museum, I received in exchange one male specimen for the Zoological Museum of the Russian Academy. I had the precious specimen with me on my way home, and this gave me the unique opportunity, during my short stop in Paris, to compare the bird directly with the type and topotypes of *L. davidi*, from Ta tsien lu. I found that the Yunnan bird is distinct from the typical bird as might be expected, of course, but could not be ascertained by mere comparison with the figure of the type (in the Nouvelles Archives du Museum, IV^{me} serie, T. 3^{me}, Paris 1901, pl. 11). I call it

Luscinia davidi gloriosa

Diagnosis: Male differing from *L. davidi davidi* in having the breast and belly more whitish, less tinged with isabella, chin, throat and chest of a more red and brilliant hue; basal white of the tail more developed.

Type: Male adult, Li Kiang Mts., China, May 24, 1923, J. F. Rock, coll. U. S. National Museum, No. 297,006.

Comparative description: L. davidi davidi: Crown of the head, the whole upper side of the body, and wing coverts of a very dark bluish slate (darker than slate color, Ridgway II ed.); narrow frontal band, sides of the head with the ear coverts, and a broad band which runs from the ear coverts along the sides of the neck and terminates on the sides of the chest, of a deep jet black; sides of the neck, dorsally of the black band, with an ill-defined white patch; chin, throat, and chest bright orange chrome (in the the original description, "rouge de Saturne," i.e. minium red; on the plate, the red hue much exaggerated); breast, belly, and under tail coverts strongly tinged with cinnamon buff, only the center of the belly narrowly whitish; flanks and tibia clay color; upper tail coverts black; rectrices black, all excepting the middle pair marked with white basally, the markings most

developed on the 3rd pair; middle pair black all over; 2nd pair with outer web white for about 6/10 from the base, inner web black or marked white just at the base; 3rd pair with outer web white for 7/10, inner web for 6/10, the black tip measuring 11–16 mm.; 4th pair with outer web white for about 1/2, inner web for 1/4; 5th pair white for 1/3 externally and 1/4 or less on the inner web; 6th pair marked only by a white wedge along the shaft at the very base. Wing 69–73; 10th ("first" or "abortive") primary projecting beyond primary coverts for 12–14 mm.; external web notched only on the 7th or 6th (or 4th and 5th) primary and very faintly on the next one, but not at all on the 8th (or 3rd) primary. Described from 5 specimens, Mus. Jardin des Plantes, Paris, all marked Ta tsien lu, Mgr. Biet, without any calendar date, but all freshly molted autumn birds. The type, marked (on the stand; original label not preserved) C.G. 1898, N 337, Ta tsien lu, Mgr. Biet, and another specimen, numbered 336, are mounted. In these the bright color of the chest is rather badly faded through constant exposure to the light, but in the remaining 3 specimens kept in the skin collection, the color is well preserved.

L. davidi gloriosa. Flanks cinnamon buff, the feathers rather dark pure gray (neutral gray, Ridgway) basally; breast and belly whitish, faintly tinged with pinkish buff; under tail coverts cinnamon buff, tibials grayish brown; chin, throat, and chest more fiery, between chrome orange and flame scarlet; black band running from the sides of the head to the sides of the chest of a deeper and more glossy hue; basal white of the tail more developed; 1st pair white basally, hidden by the coverts; 2nd and 3rd pair white on both webs for nearly 9/10, the black tip measuring 7–8 mm.; 4th pair white internally for 9/10, externally for 7/10; 5th pair white on the inner web for 7/10, on the outer web for 4/10; 6th pair with white wedge-shaped markings at the base; upper side colored as in *davidi.* Wing 73; proportions and notches of the quills as in *davidi.*

Described from 5 freshly moulted specimens, 4 in the U. S. National Museum, 1 now in the Zoological Museum of the Russian Academy of Sciences, all collected by J. F. Rock, in July, 1923. Exact localities on the labels: Li Kiang Mts.; Muang Hung Ko; between Yulo and Nguluko; and Heshwe, all localities on the Li Kiang Range.

The question of coloration in the female is complicated. In the U. S. National Museum series of Yunnan birds, the bird labelled as female is bluish slate above, pale olive buff below, with particolored tail as in the male. I am sure that it is really a female and not a young male because in *L. calliope* the scarlet throat is already assumed by the male in the first autumn, after the molt from the nestling plumage. Oustalet (l.c.) has described the female of *davidi* as similar to that of *L. calliope,* differing only by being darker above and more buffy beneath; and says that it is olive brown above with uniform olive brown tail. Hartert ("On some rare species of the genus *Larvivora* from China," Ibis, 1907, 621–623) describes the female of *davidi* as similar to that of *ruficeps* and generally again as a bird olive brown above with uniformly colored tail. In the 'Vögel der

paläarkt. Fauna,' Hartert quotes only the description by Oustalet. Neither of the authors refers to the proportions and notches of the primaries.

Unfortunately I did not examine the Tring specimens during my visit there. As to the Paris bird, it is darker and more neutral brown above than *calliope*, with less defined eyebrow stripe, and colored more below with buff, but generally much the same as *calliope* from Siberia. Wing proportions: 10th primary projecting beyond primary coverts by 8.5 mm.; outer web notched on the 8th, 7th, 6th (or in reverse order, 3rd, 4th and 5th) and very faintly on the following primary—also totally different from *davidi*, and much the same as in *calliope;* but the 9th primary is equal to the 2nd, whereas in the Siberian specimens of *calliope* the formula is 5, 9, 7 (or 6, 2, 4). Certainly, the form from Ta tsien lu is not *davidi*. It is, however, difficult to say what are the relationships of this bird. I think it is the *local resident* form of *calliope*, perhaps somewhat ill-defined; among the series of *calliope*, in the Zoological Museum I find 4 birds obtained in eastern Nan shun (exact localities Shi-koo, Shao-tzgan, and Min dan sha) late in spring and in summer, that have the wing formula 4, 9, 3 (or 7, 2, 8), the 9th (2nd) quill shorter than in Siberian birds, and the eyebrow stripes less developed. On migrations this locality is invaded by Siberian birds with more pointed wing.

Adult female of *gloriosa*.—Above bluish slate, lighter than in the male; forehead paler; sides of the neck with an ill-defined white spot as in the male; frenulum, fore part of the eyebrows, and sides of the head olive buff; under side, pale olive buff, chest darker, sides of the chest darker and more olive, throat paler, centre of the belly white; tail particolored, white markings less developed than in the male; middle pair of rectrices black, 2nd pair white on the basal 3/4 of the outer web only; 3rd pair white on both webs for about 3/4; 4th pair white also on both webs for about 2/3; 5th pair white only in the basal 1/4 of the inner web; the 6th marked only by a small white wedgeshaped spot at the base.

Nestling plumage of *gloriosa:* Dark grayish olive brown above, indistinctly squamulated by darker edgings of individual feathers; very small light spots on the scapulars only; below lighter and more distinctly squamulated, individual feathers with dirty white centers and sooty brown edges; flanks brown, but little lighter than the back, feathers with lighter centers and sooty brown edgings.

Being uncertain as to the exact systematic position of *davidi*, I prefer to leave it in the rather heterogeneous assemblage which is comprised under *Luscinia* in Hartert's 'Vög. d. paläarkt. Fauna.' Surely, however, it is not a near relative of *calliope*, *pectoralis*, and *tschebaievi*, as already has been pointed out by Hartert (Ibis, 1907, l. c.).

A FURTHER STUDY OF THE HOME LIFE OF THE NORTHERN PARULA, AND OF THE YELLOW WARBLER AND OVENBIRD

BY HENRY MOUSLEY.

Plate VIII.

IN 'The Auk' for April, 1924, I recounted my experience in June 1921 with that little feathered mite the Northern Parula Warbler (*Compsothlypis americana usneae*). Ever since then, I have lived in the hope of again meeting with a pair of these birds, and making a more complete study of their home life. On May 25, 1924, in the same wood where the previous nest had been found, I flushed a male off the ground, and I thinking it very probable that he was attending the female whilst gathering building material, I watched him closely. At first he remained in the branches of the lower shrubbery—which still further confirmed my suspicions—and then flew into the top of a tall elm tree, some little way off, where I had first heard him sing on May 11. In the neighborhood of this elm tree, I remembered there was a tall dead balsam fir with some usnea lichen hanging from it. To this tree I quickly made my way, just in time to see the female leave one of the drooping branches 40 feet up, near the top.

Concealing myself, I had not long to wait before the female returned, and then I saw that my wildest hopes were about to be realized, for the nest was only in the making. The favorite singing tree of the male, the tall elm, was just 20 yards from the nest, but there were two others as well, also elms, one 22 yards, and the other only 9 yards, from the nest. It will be seen on reference to the accompanying plate, that the nest is somewhat different from the one portrayed in my previous paper ('Auk,' vol. xli, 1924, pp. 263–88) being deeper, although similar in its suspended nature—as opposed to being enclosed between two long hanging streamers of usnea as is more often the case—and perhaps more nearly resembling a Baltimore Oriole's nest, than the other

[1] Read before the Province of Quebec Society for the Protection of Birds, Montreal, January 12, 1925.

one did, which is shallower, and not unlike a Vireo's nest. It was composed entirely of usnea lichen, with perhaps a suspicion of fine down as a lining, and taken all round, is the largest example of a nest of this species I have so far found, the dimensions being as follows: Outside diameter 3, inside 1½ inches; outside depth 3, inside 2 inches. The thick bunch of usnea hanging below, and at the side of the nest, does not belong to it at all, the nest being entirely constructed by the bird from materials brought from a distance, agreeing in this respect with the other. Had I not watched the female arrive and depart, it would have been perfectly impossible in the first instance to have detected any outline of a nest whatever, just a few strands woven together indicating its position, and which were, no doubt, placed there that very day or the one previous. Unfortunately, not having the necessary materials with me on this first day I was unable to make any specific notes concerning building operations, and it was not until the morning of the 28th, that I was again able to visit the nest.

During the three and one-half hours I spent with the birds, the female brought 62 loads of building material to the nest, always arriving and entering it by a certain well defined route, the male singing on forty of these occasions, and at other times as well, usually from his favorite tree. The female chipped five times when arriving at the nest, and twice on leaving it. In the afternoon, I spent another two and one-half hours with the birds, the female bringing 43 loads of material to the nest, whilst the male sang on fourteen of these occasions. It was interesting to notice that even on the very first day, the inherited, or inborn habit of moulding the nest into shape, was indulged in, the female turning round in it on several occasions, even when there was hardly any semblance of a nest, and the act seemed fraught with considerable danger to the fabric. At 3.32 p.m., the male, who was singing in elm tree, No. 2, suddenly flew into the nesting tree, apparently in search of the female. Not finding her at the nest, he got into it, and turned round two or three times as if desirous of moulding it. Coming out, he perched on a branch, and seeing the female in a large cedar tree nearby, he gave vent to an outburst of the well known "buzz" notes only, there being no time for any other part of the song, as he dashed after her. This was the only occasion

on which he ever attempted to sing in the nesting tree, although I have known him to do so after having fed the young. Eight minutes later, the male, who was again singing in elm tree No. 2, flew into the nesting tree, drove the female onto the nest, and then went off. It would seem from his especial activity on these two occasions, that he was not satisfied with the progress that was being made in the construction of the nest, although he never once brought any material to help in its completion, i.e., during the seventeen hours I spent with them at various times, from eight o'clock in the morning, to half past four in the afternoon. He usually, however, accompanied his partner during her foraging excursions, returning with her, and singing from his favorite trees, 111 times out of the 221 journeys she made, which journeys were at the rate of one in every 4.6 minutes. Speaking of these journeys, and more especially of the loads that were brought each time, I wish it to be understood that the word load must not be construed too literally, as in many cases it consisted of one tiny thread of usnea only, the bird really never coming with its beak crammed full, as Robins do.

Few people realize the labor entailed in the construction of one of these lovely little nests, this one possibly necessitating from 500 to 750 journeys if not more with materials, before it was completed to the liking and requirements of the female. In constructing it, she worked from the top downwards, strengthening and thickening the rim and sides first, whilst the bottom was left so thin, that I could see her through it, and at times, when moulding operations were in progress, I often thought she would drop through. On June 1, the male sang in a small birch tree only four yards from the nest, this being the nearest approach. In the afternoon, neither bird appeared at the nest during the hour I was there, but the male was heard singing on four occasions at some distance away. I concluded the nest was completed the next day, as on the three following ones, although I spent eight hours altogether at the nest, I never once saw either bird near it, the male, however, was heard singing in the distance on five occasions. I thought nothing of this at the time, concluding that the eggs were being laid, and that I did not happen to be there when the female was on the nest. I did not visit the site again until the 15th, but

neither on this date, nor on the 16th, or 20th, did I see anything of either bird, the male, however, was heard singing in the distance on a few occasions only. I then realized that some tragedy must have happened, so I cut down the tree and secured the nest, which was 8 ft. from the top of the tree, and 2 ft. from the trunk. It contained no eggs, nor could I find traces of any on the ground, which would have been the case had they fallen out whilst the tree was coming down. Thus once again, disaster overtook my enterprise, but it left me fortunately somewhat the wiser, as to another phase of the home life of this delightful and smallest of eastern Warblers.

The male of my pair of Yellow Warblers (*Dendroica aestiva aestiva*)—which are by no means common at Hatley—was first observed in the village on May 18, 1924, but it was not until June 13, that I happened to be near the spot again, and noticed him singing in a dead maple tree, in a large disused garden with a stream running through it, and later he fed the female, upon her leaving a large cedar hedge. Proceeding to the spot from which she came out, I found the nest, which, unlike the usual run of nests of this species, was heavily lined with feathers, instead of plant down, as will be seen in the plate. It was nine feet above the ground, in the forks of a small cedar tree, and contained five heavily incubated eggs which hatched out on the morning of the 17th. I had spent four hours with the birds during the days intervening between the finding of the nest and hatching of the eggs, my seat of observation being under the drooping boughs of an apple tree, eleven yards from the nest. During these four hours, I saw the male feed the female on the nest four times, and once he chased a Catbird away who had ventured too near. On another occasion, the female had left the nest and on returning, found a young Song Sparrow clamoring loudly for food. This, as is usual, aroused the parental instinct, and caused her to at once find food and feed the youngster. On the morning of the 17th, I watched the birds for only three-quarters of an hour. During this time, the male sang ten times in his favorite tree—the dead maple, five yards from the nest—and once in the apple tree, just above my head. It was then that I decided to keep a very careful account of the exact number of times that he sang, and this I carried out to the end, it

being one of the items not dealt with by Mr. Bigglestone, in his study of the species.[1] Besides singing, the male assisted in feeding his offspring, on one occasion arriving at the nest at the same time as his partner, whereupon, they both stood side by side on the edge of the nest—and fed the young. In the early stages of a Warbler's home life, brooding the young is the order of the day, this duty almost always devolving upon the mother. On the 18th, during the one and one-half hours I was at the nest in the morning, all but seventeen minutes was spent by the female on the nest, the male never once engaging in this duty during the whole time I spent with them. The male on arrival at the nest, often sang very near it, with his mouth full of food, which proceeding is nothing unusual of course, but the fact of his singing so often, and so very near the nest, was a new experience, which was further exemplified on the 19th, when he actually sang on the nest itself, thereby, "giving the show away"! a most unusual thing for a Warbler to do in my experience.

This bird sang twenty-seven times on the nest itself after having fed the young—once eight times in succession—besides thirty-five times very near it, and one thousand seven hundred and thirty-eight times away from it, making a total of one thousand eight hundred times that I heard him sing in the twenty-nine hours I was at the nest, or at the rate of rather more than once every minute! At times, the song was repeated at the rate of six times to the minute, but never more, although Mr. Harrison F. Lewis once heard it twelve and once fourteen times to the minute, but this is exceptional I think, three or four times being the more general thing.

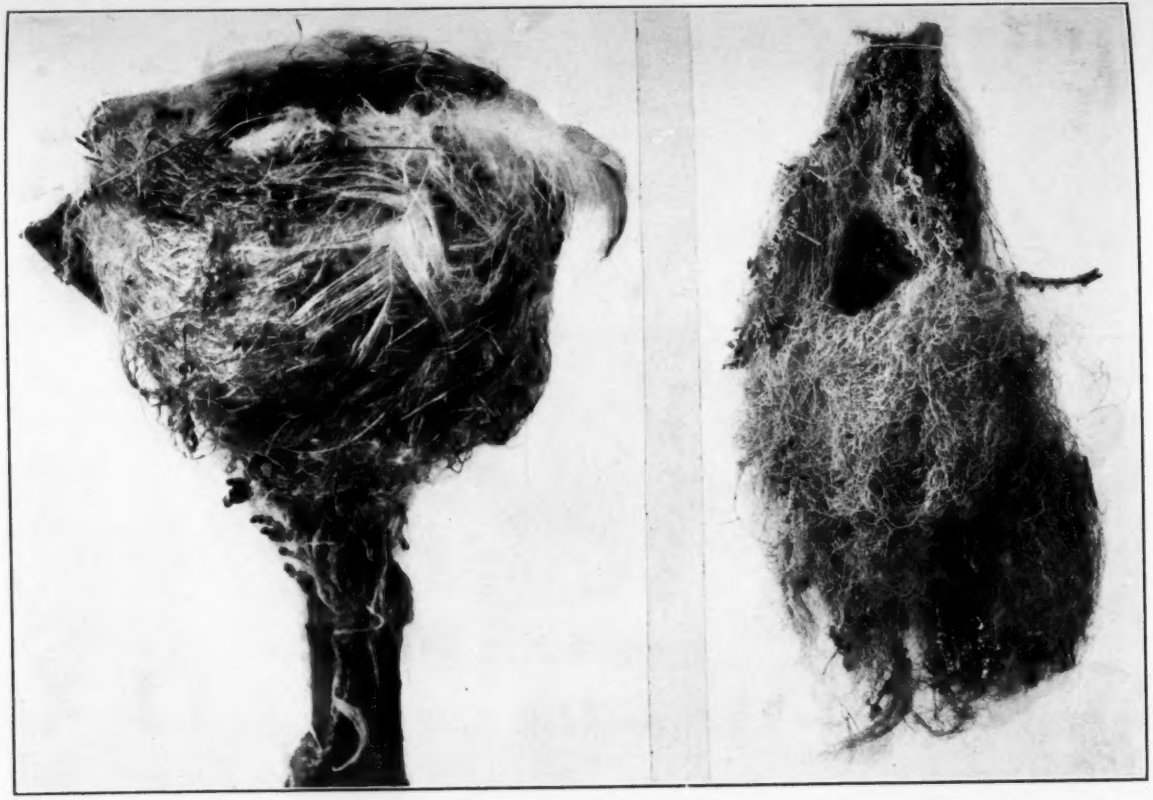
Notwithstanding the large number of birds which frequented the old garden at Hatley—I only twice saw this male try to chase any of them off, once a Catbird, and once a Song Sparrow. This, I think, is a good instance of the well-known fact that males, as a rule, are tolerant of the approach or company of other birds, providing they are not of their own, or related species. Had another Yellow Warbler, or any other species of Warbler for that matter, have put in an appearance, I think it, or they, would have been promptly chased off. As is customary in the early stages, the

[1] Wilson Bulletin xxv, 1913, pp. 49–67.

excreta or feces are usually eaten by the parents, more especially by the female, who generally keeps the nest clean whilst brooding is the order of the day. In the present instance, she attended entirely to this matter until the fourth day, when the male commenced to remove the fecal sacs, as did also the female, the former in some cases depositing them on the roof of an adjacent house, but more often—as was the rule with the female—flying with them into a tree, and dropping them on the ground, or leaving them on the bough of the tree. Each bird on one occasion dropped the sac near the nest, but as I have always observed in cases of this kind, they at once descended, and picked it up again and carried it off. On the 23rd, a most unusual thing occurred, the female flying from a height direct onto the nest, instead of approaching it in the usual stereotyped way. The nest during a part of the day, was a good deal exposed to the sun's rays, at which times, the female brooded the young with outspread wings, rarely leaving them to seek food, this being brought by the male, who usually passed it on to his partner, and she in turn gave it to the young. On this same day, the young began to get very lively, stretching their wings and moving about in the nest, which seemed to overjoy the male, for he sang no less than five hundred and fifty-two times in four and one-half hours, or at the rate of a little over twice to the minute, four times on the nest itself, fourteen very near it, with food in his mouth, and the remainder mostly in his favorite singing tree. Singing when near the nest with food in his mouth, was usually, I think, a warning to the female of his arrival, as she was generally on the nest at these times, and left it at once. On the following day, the 24th, the young became still more lively, and during this, and the previous day, they kept their parents pretty busy feeding them, the former on several occasions arriving at the nest simultaneously, when they stood side by side—and fed the young. Possibly, some of the evening sessions were as interesting as any, for then the parents invariably kept close to the nest, gathering little insects off the surrounding vegetation, and lice no doubt from the outside of the nest, as the female usually spent a good deal of time at this work in the evenings, as well as catching small flies on the wing, which the male did also. The latest I heard him sing was 7:45 p.m., and usually when I left, he was perched near the nest, whilst his mate brooded the young.

During the afternoon of the 26th, I could see that the young would probably be leaving the nest early the following day, and so it turned out, for on arrival at 8:15 a.m., the parents were feeding them in the adjacent shrubbery. They had been thus exactly ten days in the nest, corresponding with the time given by Mr. Bigglestone. During the twenty-nine hours of this period that I was with them, they were fed 112 times by the male, and 277 by the female, at the rate of once in every 4.5 minutes, the time brooded by the female being eight hours on 77 occasions, the length of each brooding being 6.2 minutes, the longest fifteen minutes. There can be no hard and fast rules as to the length of each brooding, as this is governed by a variety of circumstances, such as weather, location of nest, whether exposed to the sun or not, and the frequency of the male's arrival with food, etc., etc. As regards the periods of feeding, I find Mr. Bigglestone's birds fed their young on 2,373 occasions, during the 144 hours of observation, which gives an average for the whole time, of once in every 3.7 minutes, mine once in every 4.5 minutes which is very close indeed. Both birds were quite fearless, the female perhaps rather more so than the male, although the latter often gathered food in the apple tree under which I was sitting, this food for the most part consisting of soft green larvae and small insects of various kinds, which were always conveyed to the nest by a certain well defined route, not only by the male but by the female also. In arriving and departing from my seat of observation, I never once approached the nest, always taking a circuitous route, in order to avoid as much as possible upsetting the natural functioning of the birds. In this, I think, I was entirely successful, and obtained as perfect a picture of their home life as it was possible to do, whilst sitting in full view of them, which I much prefer to being imprisoned in a tent.

The Ovenbird (*Seiurus aurocapillus*) is a species, the study of whose home life I very soon found out would have to be conducted on somewhat different lines to that of any of the other Warblers I had so far come in contact with, i.e., I had partly to conceal myself behind an improvised screen of green boughs, owing to the nervous temperament of the birds and their secretive ways. The nest was found accidentally by flushing the female off it on June 18, 1924, on which date it contained three fresh eggs, which number



NESTS OF YELLOW WARBLER (LEFT) AND NORTHERN PARULA WARBLER (RIGHT)

UNIV. OF MICH.

was not increased, so that it looked as if incubation had just commenced that day. Two of the eggs hatched out on the 30th, the third one proving to be addled, so that incubation had lasted exactly twelve days. The nest as will be seen from the photograph, was situated on some sloping ground, in an open spot in a large wood, being surrounded on all sides by spruce and balsam fir trees. It was composed of dry leaves and grasses, with fine grasses and black hair-like rootlets as a lining, with a broken down stem and frond of the bracken fern incorporated as a kind of shield or covering. The opening to the nest faced nearly due east, and this was in my favor, as the ground dipped away, then suddenly rose, and almost as suddenly dipped again, thus forming a ridge, behind which I was enabled to secrete myself, just seven yards from the nest, the overhanging boughs of a balsam fir acting as a partial screen. As only two of the eggs had hatched out on June 30, I decided to wait until the following day before commencing operations. Arriving the next morning at 7:45 a.m., I found the female on the nest brooding.

Nothing happened until 8:30 a.m., when I heard the male singing some distance away, but it was not until 8:53 a.m. that he arrived in the trees to the north of the nest with food in his mouth. Approaching nearer, he unfortunately espied me, and would not venture near the nest, flying round about and above me, chipping loudly all the time, and eventually dropping the food. Then he commenced to sing, and kept this up until 10:47 a.m., singing altogether on forty occasions. By this time, I was beginning to get desperate, for the female had not left the nest, and the young had had no food for two hours. However, I stayed on until eleven o'clock, and then pretended to leave the spot, but when out of sight doubled back again, and hid behind a tree some way off from the nest, but where I could see it with my glasses. It had the desired effect, for five minutes afterwards the female left the nest. I at once set about making an improvised blind by placing a quantity of fir boughs all round my seat of observation, I also had a look at the two young, and removed the third egg which had not hatched, and then returned to my blind to await further developments. It was not, however, until 11:20 a.m. that the female returned with food, and then she was too much afraid to go to the

nest with it, hanging about for another twenty-five minutes, before she ventured to feed the young, which had had no food for four hours! After feeding them, she brooded them, with her head facing inwards, and her tail practically blocking the entrance to the nest. Hitherto, she had brooded the young with her head facing the entrance, and her eyes almost always looking in my direction. At 12:15 p.m., she cleaned the nest, and twenty-five minutes later left it, walking very quietly and secretively away. Five minutes later, the male began to sing, and this he kept up until one o'clock, after which I never saw or heard him again for the rest of the day. At 1:05 p.m., the female returned, walking to the nest and feeding the young, and then leaving. This she repeated on several occasions until 5:45 p.m., when I left; after having been at the nest for ten consecutive hours. During that time, the young had only been fed on seven occasions, or once in every eighty-six minutes, and that by the female alone, who had also brooded them for seven hours and twenty-two minutes, out of the total of ten hours. All the male had done to encourage her was by singing on sixty-one occasions only. Needless to say it was a very strenuous day, not only for the mother bird, but for myself as well. However, I looked forward to my next visit with pleasure, seeing that I had still to learn how long it would take the male bird to overcome his shyness, and feed his offspring.

On arrival at the nest at 12:45 p.m. the following day, much the same kind of thing went on as on the previous one, the female was brooding when I arrived, and continued doing so until 2:55 p.m. During that time, the male sang eleven times, and it was his arrival at the nest with food, that caused the female to leave. Instead of arriving in the trees to the north of the nest, he now appeared walking very carefully and secretively—down a very narrow little run-way, directly to the left of the nest. As he emerged from under the ferns, and came out into the open space between these and the nest, he looked furtively in my direction, and continued doing so each time after delivering a morsel to the young. When this was finished, he walked quietly away in the same direction as he had come. Twenty-three minutes later, I was somewhat surprised to see the female also arrive with food, following in the footsteps of her partner, as previously to this she had approached the nest

from the north. However, from now on, both birds without a single exception, approached the nest from the south, down the little run-way, which brought them almost to the site without having to come out into the open. After this, each bird fed the young once again before I left at 4:45 p.m., having been at the nest for four hours, during which time the young had been fed four times only. However, matters were improving in every way, the male having overcome his shyness, feeding his offspring as often as his partner, and moreover, the intervals of feeding had increased from once in every eighty-six minutes, to once in every sixty minutes, which average was still further increased on the following and succeeding days. So intensely interested had I become by this time, that I determined to spend the greater part of the next day—July 3—at the nest. Arriving at 8:15 a.m., I remained until 4:45 p.m., eight and one-half consecutive hours, during which time the young were fed on thirteen occasions, six by the female, and seven by the male, once in every thirty-nine minutes, the food consisting mostly of soft green larvae, small flies and insects, with a good sized moth now and again. The young were now getting older, requiring more food and less brooding, the periods of the latter extending to fifty-three minutes at a time, instead of seventy-two, as on the two previous days. The male sang on fifty-eight occasions. The following day I spent another seven and one-half hours with the birds, but in this case they were not consecutive ones, from eight-thirty to eleven-thirty in the morning, and from two to six o'clock in the afternoon. Up to this time there had been no visible signs of how the fecal sacs had been disposed of, but this being the fourth day, I expected to see both birds either eat them, or carry them away. That the female had eaten them up to now, whilst cleaning the nest, there was no shadow of a doubt, but when a bird is rooting about with its head buried in the nest—and in this case with its back and tail turned towards me—it is very difficult indeed to see the actual process of eating, notwithstanding that one knows it is taking place. The male more often than not, rarely devours the sacs, preferring to carry them away, but in this case he broke the general rule and was the first to devour them, the female following suit shortly afterwards. The male sang fifteen times only in the morning, and not at all in the afternoon, but he

fed the young nine times to his partner's six, but beyond this nothing unusual took place except in the afternoon, when the female chased and drove off a chipmunk, who had ventured too near the nest. On the following day, the 5th, the male gave up eating the excreta as I expected, but the female continued doing so to the very last, differing in this respect from all my previous experiences, for it is the general rule for both parents to fly away with the fecal sacs in the later stages of the home life. In this case, the male walked away with them, on this, and the following day, but on the 7th, reverted to the usual custom, and flew away with them. On the 5th I arrived at the nest at 5 a.m., to find both parents away and the young moving about in the nest—one more than the other—as though they were anxious to vacate it. At a quarter past five, the female returned, and soon after the male joined her, both birds flitting about and walking along the boughs of the trees near me, whilst chipping softly, the male singing on one occasion. Their actions, which were so entirely different to those I had hitherto been accustomed to, coupled with the activity of the young—only confirmed my suspicions that the following or eighth day, would be the one on which they would leave the nest. Three minutes after the male had sung, another pair of Ovenbirds—which had a nest not far off—appeared in the trees, and then a battle royal ensued, my male chasing the intruding one up and down through the trees, with both females in attendance. Finally he drove him off, together with his partner, when he gave vent to his feelings by singing again. During the two hours I was with them, much the same kind of thing went on as at first, both birds almost constantly flitting about in the trees and chipping at the same time. I was unable to visit them again that day, but when I arrived the following morning, only the female was near the nest, flitting about in the trees as on the day previous, but more excitedly now. Looking at the nest, there appeared to be only one young bird in it, with its head half way out of the opening, and looking as though it might leave it at any minute. The female now became more excited than ever, chipping loudly in the boughs which overhung the nest. Finally, unable to contain herself any longer, she at last flew down, and literally poked the youngster out of the nest, the time being 10:35 a.m. Just previous to this, I heard the male

sing not far off, but did not see him. Hurrying to the nest, I was unable to detect the young bird amongst the dead leaves and bracken, so wandered some little way off in the direction I had heard the male sing. There I found young number one, who must have left the nest just previous to my arrival, and who was evidently being attended to by the male. It was no doubt a more lusty youngster than the other one, going off at a great pace, so I did not follow it, but returned to the nest at once, as I felt sure the other young one could not be far off. After a considerable search I at last found it, just one foot from its home, but so still had it kept, and so well did it harmonize with its surroundings, that I had failed to notice it in my first hurried search. Dropping my cap over it, I carefully lifted it up, which brought both parents on the scene at once, in a most excited state, trailing themselves along the ground, then suddenly springing up, and flying at me as it were, in an endeavor to make me give up their young. Not wishing to cause them any further anxiety, I let the little fellow go, when it at once fluttered off in the direction the other one had taken, both parents being in attendance. Thus ended my first, and so far perhaps, the only really intimate study of the home life of the Ovenbird that has yet been made.

I had spent forty-eight hours altogether at the nest, during which time I met with many new experiences, not the least of which was the much longer intervals between the feedings, and the greater length of each brooding, which may perhaps be universal in the case of ground nesting Warblers, of which this is my first study. In the present case, the average interval between feedings for the whole period, was thirty-eight minutes, and the length of each brooding, sixty-five minutes, as against a general average for the other seven studies I have made, of eleven minutes interval between feedings, and twelve minutes the length of each brooding, a marked difference, which, however, appears to have had no ill effects upon the young, as they left the nest quite as hale and hearty as any of the other young. As in the case of the Yellow Warblers, I never once approached the nest, and the young certainly could not have seen me, but what material effect, if any, my presence may have had on the behavior of the old birds, has yet to be seen by further studies. In the meantime, I am not expecting any very

startling change, looking to the proverbial shyness and secretiveness of the birds.

Before closing, I should like to draw attention to the great difference in the singing propensities of the male Yellow Warbler, and that of the male Ovenbird. In twenty-nine hours, the former sang eighteen hundred times, or on an average of rather more than once every minute, whilst the latter, during a period of forty-eight hours, sang only two hundred and fifteen times, or on an average of little more than once every thirteen minutes, quite a marked difference. This, I think, is a case of what Mr. J. P. Burkitt in his paper, "Birds' Song," (Irish Naturalist, vol. xxi, 1922, No. 11, pp. 117-25), calls "mating putting a brake or stopper on song," hence a declension of song for first nests and broods in some species of Warblers, more especially in British, than in North American Warblers. After the first brood there is a recrudescence of song as Mr. Burkitt goes on to say, and this is exactly what we find in the case of the Ovenbird, its loud "teacher, teacher," notes being heard all day long from the middle of May to the end of June, then falling off in July, if not ceasing altogether for a time, with a recrudescence in August. In other words, I think it is a species whose song is affected by parental cares, similar to that of many British Warblers, as recorded by Mr. Eliot Howard in his "British Warblers," 1907–14, and by Mr. Burkitt in the above, and other papers in the 'Irish Naturalist.' Appended will be found a table of Summaries on these three nests similar to that on the previous seven.

469 Harvard Ave., Montreal, Canada.

TABLE OF SUMMARIES ON THREE WARBLERS' NESTS

Species	Period of Observation	Hours	Times Male Sang	Number of Times Fed by		Number of Times Brooded by		Average Rate of Feeding in Minutes
				Male	Female	Male	Female	
Yellow Warbler	June 17–27	29	1800	112	277	Nil.	77	4.5
Ovenbird	June 30–July 8	48	215	37	38	Nil.	24	38.4
				Loads of Nesting material brought by female		Rate of Delivery of nesting material in minutes, once in		
Northern Parula	May 25–June 2	17	111	221		4.6		----

Species	Period of Observation	Hours	Total Time Brooded Hours and Min.	Times Feces Eaten by		Times Feces Removed by		Age of Young at Beginning of Observation
				Male	Female	Male	Female	
Yellow	June 17–27	29	8.01	Nil.	?	27	49	Just hatched
Ovenbird	June 30–July 8	48	26.04	4	17	10	Nil.	" "
Northern Parula	May 25–June 2	17	——	——	——	——	——	——

OBSERVATIONS AND BANDING NOTES ON THE BANK SWALLOW—II.

BY DAYTON STONER.

SEASON OF 1924.

IN a recent paper[1] the writer set forth certain observations and banding data on Bank Swallows occurring in the Lake Okoboji region, northwestern Iowa, during the summer of 1923. The present account is intended in part as a sequel to that narration and, in addition, as a brief discussion of some supplementary observations that are only indirectly connected with the preceding work.

It so happened that the writer and Mrs. Stoner were again fortunate enough to be in residence at the Iowa Lakeside Laboratory on West Lake Okoboji between June 16 and July 15, 1924. Since our stay occupied approximately the same length of time and the identical season of the year as in 1923, it afforded a basis for making certain comparisons which, however, must extend over still other seasons to give conclusive evidence. In the four weeks a total of 409 birds representing nineteen species were banded. Of the 207 Bank Swallows in this lot, ninety-one were adult and 116 were immature birds. These together represent slightly more than fifty per cent of all the birds banded and an increase of about twenty per cent over the total number of Bank Swallows banded in 1923, when this species made up approximately thirty-one per cent of the total number of birds banded.

The greatest number of Bank Swallows banded in any one day was forty-eight on July 3, when two adults and forty-six fledglings were taken; on July 5 one adult bird and forty-six additional fledglings were fitted with bands. Since only well fledged young were banded this item is of interest as indicating something concerning the height of the nesting season in this locality.

Observations on Colonies. Our efforts in 1924 included observations and banding operations in thirteen different colonies; five of

[1] 'The Auk,' XLII, No. 1, 1925, 86–94.

these had been worked in the summer of 1923. All were in gravel pits of greater or lesser size, and some of them showed marked fluctuation in size in the two years, as here shown:

Locality	1923	1924
Colony ½-mile S. of Laboratory	163 burrows	50 burrows
" 2 miles N.E. of Laboratory	6 "	75 "
" ½-mile N.E. of Laboratory	3 "	3 "
" 1 mile W. of Milford	50 "	20 "
" 2 miles W. of Milford	(about) 8 "	(about) 5 "

Although the species seemed more abundant in the region in 1924, conditions in these gravel pits were practically the same during both seasons and no good reason can be advanced for the variation in number of the birds. The figures given suggest that perhaps a considerable number may not return to the same nesting site year after year and that the Bank Swallow population of a given pit in any season is an extremly variable quantity and largely dependent on chance. Our failure to recover more than one of the birds banded in 1923 lends some weight to this conclusion.

The largest colony that we worked was one inhabiting a large abandoned gravel pit two miles east of the town of Spirit Lake which, on June 28, contained 272 burrows in various stages of completion, some of them with eggs others with young birds.

In practically all the burrows examined the outer one-third to one-fourth was somewhat lower than the terminal two-thirds or three-fourths. This feature of construction has several advantages for the Swallows, in that it prevents rain from washing into the burrows for any considerable distance; it prevents such flying enemies as Hawks from easily seeing the young birds while, as is their custom, they await the return of the adult at the mouth of the burrow; and furthermore, the angle or curvature thus formed excludes the light to which these creatures seem averse while nesting. Perhaps also as Audubon suggests (Birds of America, I, 191) the slight ascent contributes to the easy disposal of the loose materials as they drop down during and subsequent to burrow construction.

The inhabitants of a group of about fifty burrows in a gravel pit one-half mile south of Milford exhibited unusual activity on and about June 26 for incubation of the eggs and feeding of the young

were under full sway at this time. Due to frequent rains the banks of the pit had fallen down in some places with the resulting destruction of several burrows, some young and possibly some adults. In one case a nest with five well fledged young had fallen in such a way as to leave the occupants quite unharmed. The interesting part of the find was that the nest, presumably constructed this season, had been built exactly on an old nest and was contained by it. This would seem to suggest that while these birds use the same burrows season after season fresh materials are each year fashioned into a new nest which may or may not be built on an old one.

The breeding season seemed farther along in this colony than in any other visited at this season. This might have been due to the fact that the members of the colony had been less disturbed than those in other gravel pits and so had been able to mate, excavate their burrows, lay eggs and go through the incubation period with little or no molestation. The burrows averaged deeper here also, perhaps for the same reason.

Observations on Adults. Ordinarily adult birds do not struggle much in the hand though they usually void their excrement during the excitement incident to being handled and banded. Not many adult birds of other species do this although it is a common occurrence among young birds of practically all the forty-six species that I have banded.

As noted in my 1923 observations, practically all the nests were lined with grayish or white feathers from the domestic fowl. In one instance a bird was observed to fly after and grasp in its bill a small white feather that had blown from the ground near its burrow and fly away with it.

Mating seems to continue over an extended period of time. Even as late as June 25 when some pairs had young in the nest others were not yet mated. The following brief table will epitomize the situation in this region.

Eggs found as early as June 19
Eggs found as late as July 9
Young found as early as June 25
Fully fledged young ready to leave nest found June 30
Newly hatched young found as late as July 9.

The members of one colony in particular, the one at Spirit Lake, were uniformly late for they were still mating and excavating burrows on July 1. Six days previously thirty-five burrows had been excavated while on July 1 the number had been increased by fifteen. Sometimes the birds flew around after one another, apparently, two males after a female; occasionally the pursuit ended when all three flew into a burrow. Few if any new burrows were excavated in any of the colonies after July 3 and I do not believe that the species is double-brooded in this locality.

In an attempt to secure a considerable number of these birds quickly for banding, a small khaki-colored blind was set up in two of the colonies at a distance of fifteen to twenty feet from some of the burrows. At first the Swallows seemed quite undisturbed by it, flying in and out of their burrows and carrying on as usual. However, they became more suspicious after I had crawled out to make a capture or two with the long-handled net and the time between their returns to the nest after such a performance became increasingly greater. Even when they had young in the nest the adults occupying the burrows nearest the blind seldom entered them after they "discovered" that some one might issue from it at an inopportune moment.

Although several of the birds banded in 1924 were retaken during the season, these records are included under the head of "Repeats" in this paper although, of course, not all of them belong strictly in that group for sufficient time had elapsed between the date of banding and the time of recovery to term the record a "Return."

Returns. Of the seventy-six young and adult Bank Swallows banded between June 18 and July 16, 1923 but one was recovered in 1924. This I am calling a "Return." Adult No. 15338, banded on June 28, 1923, at 4:45 P.M. in a small gravel pit one-half mile northeast of the Laboratory was recovered at the same place and from the same burrow on June 19, 1924, at 10:00 A.M. On both occasions the bird was taken with a hand net as it flew from the burrow. On the date of its recovery it had just carried nesting material into one of the three burrows in the pit, all three of which were occupied this season as in 1923. Both the band and the bird were in excellent condition after the year of wear and tear. Apparently this adult had mated again and was preparing to rear

another family. Where it had been in the meantime I do not venture to guess.

The appended table gives in summarized form certain information on the birds banded and recovered in 1924 and which are here termed "Repeats."

TABLE OF REPEATS

All were adults and all were recovered in the same colony in which they were banded with two exceptions.

No.	Banded	Locality	Recovered
73657	July 8, 9:25 A.M.	Spirit Lake[1]	July 9, 10:10 A.M.
82036	June 16, 3:30 P.M.	½-mile S. Lab.	June 17,
82042	" 19, 11:30 A.M.	½-mile S. Lab.	July 1, 8:50 A.M.[3]
82043	" 19, 11:45 A.M.	½-mile S. Lab.	June 24, 10:30 A.M.
82045	" 19, 2:30 P.M.	2 miles N. E. Lab.	" 30, 5:15 P.M.
82047	" 19, 3:00 P.M.	2 miles N.E. Lab.	" 19, 7:45 P.M.
83406	" 25,	Spirit Lake	" 28, 2:10 P.M.
83411	" 25, 3:00 P.M.	Spirit Lake	July 1, 3:10 P.M.
			" 8, 9:15 A.M.
83419	" 26, 2:15 P.M.	½-mile S. Milford	" 2, 11:20 A.M.
83424	" 26, 3:05 P.M.	½-mile S. Milford	" 9, 10:00 A.M.[3]
83436[2]	" 28, 2:00 P.M.	Spirit Lake	" 8, 9:10 A.M.
83437[2]	" 28, 2:00 P.M.	Spirit Lake	June 28, 2:10 P.M.
129194	July 1, 3:00 P.M.	Spirit Lake	July 8, 9:00 A.M.

Remarks on the Table. Capture of the birds for banding is apparently not a deterrent to nesting, e.g., No. 83411 and No. 83419 had carried food to the young a moment before they were captured the second time.

Capture of the birds does not frighten them greatly, e.g., No. 83437, and at the height of the nesting season they quickly return to the nest.

While the sex of Bank Swallows can not be determined on external characters, promiscuous mating, perhaps even polyandry or polygamy is suggested by the actions of No. 82042 and No. 83424.

The bird bearing the former number was first taken from a bur-

[1] Colony on northern edge of town.

[2] Taken at same time from same burrow, the latter one repeating in the same burrow.

[3] Recovered in Spirit Lake colony.

row occupied by that bird and another which we did not capture. Eleven days later No. 82042 was taken from a burrow in a gravel pit six and one-half miles air-line northeast of that in which it was originally captured. Furthermore, in the same burrow at the same time and captured with it was another individual which we banded No. 129187. Possibly it was the one that escaped us on June 19, although it does not seem likely that a pair once mated in a given colony would voluntarily leave and take up their abode together in a new colony.

No. 83424, banded on June 26, at a gravel pit one-half mile south of Milford, was recovered twelve days later in one at the north edge of the town of Spirit Lake, nine miles, air-line from the place in which it was originally captured.

The above events occurred at the height of the breeding season. Were these birds unable to secure mates? Had laborers or bird banders frightened them away from the places in which they were originally banded? Were they outcasts, so to speak, from society? Were they just visiting? Or does polyandry or polygamy or promiscuous mating sometimes obtain among Bank Swallows? Perhaps future observations and banding work will answer these questions definitely. For the present the species is under suspicion.

SEASON OF 1925.

Observations on Colonies. Our observations in 1925 were carried on in 18 different colonies, nine of which had been worked in 1924. The largest colonies were found in gravel pits, but a few small ones occupying burrows in roadside cuts were visited. One occupied the precipitous gravelly bank of a small lake. This year 127 adults and 766 young were banded, making a total of 1176 for the three seasons.

As before noted in my account of this species[1] the size of a given colony varies a good deal from year to year and our banding operations seem to indicate that a considerable number of the birds making up a colony one year are not present the next. Some of the smaller colonies in which a considerable proportion of the adult population was banded in 1924 furnished not a single "Return" record in 1925.

[1] 'The Auk,' XLII, No. 1, 1925, 86–94.

Even though a sufficient number of old burrows may be available, with little or no digging, for the individuals that desire to nest in a given colony, a few new excavations, at least, are made each season so that a certain number of the old burrows usually remain without occupants.

On the whole, the number of Bank Swallows nesting in the region seemed to be considerably larger than in the two previous seasons. Evidently the species is a very successful one although our observations indicate a rather high mortality rate.

Observations on Adults. Large numbers of birds were incubating on June 16, and, as in previous seasons, the breeding period seemed to reach its climax between June 15 and July 12. However, as late as June 26, the members of some colonies were still mating and constructing burrows.

As a result of this season's observations I am compelled to modify my earlier belief that the species is single-brooded here, for I found a few adults incubating as late as July 27, and others with young two days old on August 1. This seems to indicate beyond a reasonable doubt that at least a partial second brood is reared in this latitude. Further evidence substantiating this belief is afforded by adult No. 5716A, which on June 15 was incubating, while on July 10 the bird was again incubating in a different burrow of the same gravel pit. It seems, therefore, that some of the early breeding birds rear two broods.

As the period of incubation and rearing the young progressed and the latter became able to shift for themselves, the number of adults making up the colonies grew less and less until by July 25 the only adults about the pits were the few that had eggs or young in the nest. A week later the number of adult birds had been reduced to a mere handful and most of the burrow entrances were covered with cobwebs, a sure indication that the last family in that burrow had been reared for the season.

While the average number of eggs deposited in the first clutch is five or six, the second clutch averages somewhat smaller, one to four being the rule.

The melancholy air and quietness of the pits where, a few days before, the bustling activity of hundreds of gayly chattering birds held sway, now called to mind a deserted village. Only a few

stragglers, immature birds and adults with second brood young remained. These conditions prevailed in practically every colony visited and I am inclined to the belief that the return migratory journey must have had its inception at about this time.

While the adult birds were not particularly shy during the incubating period and the first few days after the young were hatched, they soon became more wary and reluctant to enter the burrows when an observer was about, even though hidden in a blind.

Although the young returned to the burrows frequently for some days after they were able to fly, the adults seldom returned to them after the family became separated. And although excrement was cast in the burrows, neither adults nor young made any attempt to remove it. Consequently some of the more popular and populous burrows became rather filthy before they were finally abandoned for the season.

Where are the Adults at Night? For the purpose of ascertaining the whereabouts of adult birds at night two large colonies were investigated. Our first excursion occurred on July 13, when a gravel pit a mile southeast of Arnolds Park and containing over 200 burrows was visited. Our examination of the burrows there between 8:00 and 9:00 P.M. revealed not a single adult even in those burrows containing immature birds of various ages. Nineteen unbanded and repeat young were taken on this excursion.

Again, on July 14, we inspected a gravel pit two miles east of the town of Spirit Lake which contained over 300 burrows. In the scores of burrows examined here between 8:30 and 10:00 P.M., but one adult bird was discovered although twenty unbanded and repeat young were captured.

While these investigations occurred at a time when most of the young were fairly well developed, it was somewhat of a surprise to find that the adults were so uniformly conspicuous by their absence. Do they congregate in other and more distant gravel pits where bird banders are not likely to molest them? Do they retire singly or in groups to some woodland roost near the pits? Does the return migratory journey date from this time? The question of their nocturnal resting place is still unanswered.

Weight of Adults. In order to determine the weights of both

young and adult birds a set of balances sensitive to one-tenth gram was fitted into an old microscope case so reconstructed that it could be carried into the field and opened readily thus exposing the balances for immediate action. Between June 17 and July 10, thirty-six readings were made on adult birds including, probably, both males and females. The weights ranged between 11.7 grams and 17.1 grams with an average of 14.89 grams. Weights taken in June averaged a little higher than those taken in July, probably due to the presence of developing eggs in at least some of the females.

Observations on Young. The first young, nestlings about five days old, were banded on June 16. This was our earliest date for birds of this age. They were successfully reared and left the nest in due time.

When young birds, that have not previously taken wing, leave the nest or the hand after being banded, they are able to fly almost as well as the adults. On several occasions I have been able to follow the initial flight of a given bird for five minutes or more and the results were invariably the same. While the young appear to be a little more uncertain of their equilibrium in the air and flap their wings rather more rapidly than the adult they seem to acquire the ability of the parent in a few seconds and dart and zig-zag in remarkable fashion. However, they apparently tire quickly and return to a burrow in a short time, there to rest and also, I believe, to receive food from the adults. The very first burrow examined on our night excursion of July 13 contained, in addition to three of the five young originally banded from it, two immature repeats each from a different burrow in the same gravel pit.

I believe that young birds after making their first few flights from the home burrow usually return to it to rest. However, as they grow stronger they fly and forage for food farther from home and hence are less likely to return to the parental burrow. An illustration of this proclivity is afforded by two immature birds which were taken from a burrow a mile southeast of Arnolds Park. These birds which were able to fly fairly well were banded and instead of being returned to the burrow were tossed lightly into the air whence they flew away easily. Twenty-four hours later we found them resting comfortably in the burrow from which they

were first captured. Some of the repeat records mentioned beyond afford additional confirmatory data.

The weight of young birds which are able to leave the nest and to successfully attempt the initial flight averages about 13.5 grams.

Additional evidence in favor of the belief that the species is double-brooded here was furnished by a family of two fledgling birds which were banded on August 7 in a gravel pit one mile southeast of Arnolds Park. Earlier in the season another family of Bank Swallows had been reared in the same burrow.

Apparently May-flies (Ephemeridæ) form an important article of diet of the young, for, during the last week in June and first few days of July, we frequently found these insects in the burrows. On a few occasions we found them in the bills and throats of young birds.

Two fledgling birds, banded from a burrow on the banks of the Little Sioux River, July 20, exhibited a tendency to walk backwards after the manner of young Belted Kingfishers. I have not observed this habit among other young Bank Swallows.

Toward the close of the nesting season when the days began to grow cooler and the warm sunshine to prove agreeable, hundreds of young birds from adjacent gravel pits settled in the dusty roads and on near-by telephone wires.

One of the interesting traits of young birds is associated with their propensity for burrowing. Apparently they expend no effort in enlarging old burrows, but, after they are able to fly well, they frequently excavate little concavities in the precipitous walls of the gravel pits at their junction with the sand and gravel that have previously fallen away. Here the birds rest and sun themselves and, at the same time, maintain a watchful eye for possible enemies.

Parasites of Bank Swallows. Occasionally small mites were found in nests occupied by Bank Swallows and sometimes the birds themselves, both adults and young, were lightly infested. However, I have never found these parasites in great numbers on any of the more than 1100 Swallows examined.

The most interesting parasites observed on Bank Swallows were the larvae of the muscoid fly *Protocalliphora* sp. Of four immature birds occupying the same nest and about ready to leave it

on July 17, one bore, on the left side of the head just above the eye, one of these reddish brown larvae. Of a family of five young, scarcely able to fly and occupying a nest in another colony on July 18, two were not afflicted; one bore a single larva, another bore three, while the third bore four small larvae. In all cases the parasites were attached at or near the top of the head of the host. Immediately about the point of attachment the skin of the bird was bare and a little beyond this area was a small mass of clotted blood and matted feathers. That the birds bearing the larvae suffered more than inconvenience from the presence of these external parasites was attested by the fact that they were neither so active nor so smoothly feathered as the non-infested occupants of the nest.

The above afford the only instances of this type of parasitism encountered among Bank Swallows and apparently it is not of common occurrence in this locality.

Other Inhabitants of Bank Swallow Burrows. The usually precipitous banks in which the burrows of Bank Swallows are excavated do not always prove to be effective barriers against the entrance of other animals and a few of more or less interest were encountered.

One burrow, uninhabited by birds, contained a garter snake (*Thamnophis* sp.) two feet long. Another burrow, about a foot below the surface of the earth, was unoccupied by birds, and it also sheltered a two-foot garter snake. There was no opening from the burrow to the turf above and how the snakes gained entrance I am unable to say.

Fleas (*Ceratophyllus riparius* R. & J.) were abundant in the mouths of some of the burrows and occasionally they were found on the bodies of well fledged and adult birds. They seemed most abundant in burrows recently deserted by Bank Swallow occupants. The insects probably breed in the debris of the nests.

A large, brownish camel cricket frequented the mouths of some burrows particularly those in more or less moist soil. It was determined by Mr. A. N. Caudell of the United States National Museum as *Ceuthophilus testaceus* Scud.

On one occasion a large carrion beetle (*Necrophorus* sp.) was discovered in a burrow feeding on the decaying remains of a young Bank Swallow.

The night excursion of July 14 revealed a rather unusual roosting place for the Northern Flicker (*Colaptes auratus luteus*). A male of this species was found, fast asleep and clinging to the sheer sides of a gravel pit, with his head inserted into the mouth of a Bank Swallow burrow.

Not infrequently numbers of a large sarcophagid fly (*Sarcophaga bullata* Park.) were to be found about and in the openings of the burrows, particularly those on which the bright sunlight fell on cool mornings. In the siftings from some of the burrows, puparia of this fly were discovered on August 13, thus indicating that it breeds in such situations. However, the fly has its enemies even under these conditions for, from four puparia discovered in one burrow and placed in rearing cages, there emerged not four Sarcophagas but four small hymenopterous parasites (*Xyalosoma* sp.) of the family Figitidae. A surprisingly high degree of parasitism is suggested by these findings.

Another adult fly, an anthomyid (*Helina* sp.) was taken from the mouth of a Bank Swallow burrow. It is possible that this insect breeds in the nest debris of the birds.

Returns. Of the 207 Bank Swallows banded in 1924, five were recovered in 1925. The following data on these returns will be of interest.

No. 83422. Adult; banded June 26, 1924, in a gravel pit one-half mile south of Milford. Recovered, June 25, 1925, from a burrow in a gravel pit two miles east of the town of Spirit Lake and about eight miles distant from the place in which it was originally banded. Bird and band were in excellent condition. The bird was incubating in a very deep burrow from which it was removed with some difficulty.

No. 83448. Adult; banded June 30, 1924, in a gravel pit two miles east of the town of Spirit Lake. Recovered from the same gravel pit but a different burrow, June 18, 1925. Band appeared like new.

No. 94620. Fledgling; one of a family of four; banded July 3, 1924, in a gravel pit two miles east of the town of Spirit Lake. Recovered (dead), July 10, 1925, in a gravel pit on the opposite side of the road and about 200 yards north of the place where it was banded. A portion of the bank of this pit had fallen away and

perhaps the bird was thus injured although evidences of external abrasion were lacking. Possibly it was breeding here.

No. 94627. Fledgling; one of a family of five; banded July 3, 1924, in a gravel pit two miles east of the town of Spirit Lake. Recovered June 27, 1924, in the same gravel pit but from a burrow several yards distant from the one occupied last year and which, on the date of recovery, contained four fledglings.

No. 129216. Fledgling; one of a family of five; banded July 3, 1924, in a gravel pit two miles east of the town of Spirit Lake. Recovered in a gravel pit at north edge of that town, June 26, 1925, two and one-fourth miles from the place in which it was originally captured; the bird was incubating on this date. Recovered again (dead) in the same place as last mentioned, July 3, 1925. The wall of the gravel pit in which the burrow was excavated had fallen away destroying the nest and perhaps injuring the bird.

While the return records are relatively few they point to the following conclusions:

1. Comparatively few birds return to the particular region in which they were reared or have bred, although some do so.

2. In no case were recovered birds breeding in the same burrows which they occupied in 1924, though it is possible that they may do so.

3. Selection of a breeding and nesting place seems to be largely a matter of chance.

Repeats. All recoveries of birds banded in the summer of 1925 are here termed "Repeats" and of these 73 were recorded, 20 of adult and 53 of immature birds. Only a portion of them are of immediate interest and value and the following will afford a basis for certain conclusions regarding activities and behavior in this species. Wherever the locality "Spirit Lake" occurs in these tables it should be understood that reference is made to the town and not to the lake itself.

Two outstanding features are indicated by the above table. Apparently family ties are broken as soon as the young are able to fly with any degree of facility. During the first few days of flight the young return to the burrows at frequent intervals, but once having left the parental burrow another one is as likely to be chosen for a temporary resting place.

1. REPEATS—ADULT.

No.	Date and Locality of Banding	Date and Locality of Recovery	Remarks
5716A	June 15. N. edge Spirit Lake	June 18. Same	Incubating
		July 10. Same	Incubating in different burrow
5718A[1]	June 15. N. edge Spirit Lake	June 18. Same	Recovered with 5719A
		" 22. Same	
5719A[1]	June 15. N. edge Spirit Lake	June 18. Same	Recovered with 5718A
		" 20. Same	
		July 1. Same	

[1] Taken from same burrow at same time.

2. REPEATS—IMMATURE

No. and Age	Date and Locality of Banding	Date and Locality of Recovery	Remarks on Recovery
8158A Fledgling	June 20. 2 miles E. Spirit Lake	July 3. N. edge Spirit Lake	In burrow with 2 members of 2 other families
8579A Imm. Able to fly	June 27. 2 miles E. Spirit Lake	June 30. Same	In burrows with 5 juvs. and 1 adult of another family
24506A Imm. Able to fly	July 1. N. edge Spirit Lake	July 3. Same	Taken with it were 2 other repeats from other families
24521A Imm. Able to fly	July 2. 2 miles E. Spirit Lake. In nest with 5 members of another family	July 4. Same	In burrow 200 yds. from the one in which it was originally banded; with 3 members of another family
24526A Nestling	July 2. 2 miles E. Spirit Lake; one of a family of 5	July 14. Same	This juv. and 1 other the only members of family at home
24708A Fledgling	July 9. 1 mile S. E. Arnolds Park	July 13. Same	8:00 P.M. In burrow 30 yds. S. E. of original one. Members of 3 other families in same burrow

24734A Fledgling	July 9. 1 mile S. E. Arnolds Park	July 17. Same	One individual from another family in same burrow
24746A Juv.	July 10. N. edge Spirit Lake. 3 others in nest	July 14. 8:50 P. M. 2 miles E. Spirit Lake	In burrow with another repeat from this colony
24788A Imm.	July 11. 1 mile S. E. Arnolds Park. 2 others in family	July 13. Same, but in a burrow 30 yds. from one in which it was originally banded	Members of 3 other families in same burrow and taken at same time
36225A Imm. Able to fly	July 21. 3 miles N. E. Spirit Lake	July 23. Same burrow	
36252A Juv.	July 24. 1 mile S. E. Arnolds Park. 4 others in family	July 29. Same	The only one at home. 10:15 A. M.
36260A Juv.	July 25. 1 mile S. E. Arnolds Park. 2 others in family	July 30. Same, but in burrow 40 yds. E. of one in which it was originally banded	Accompanied by 1 member of brood
141891 Nestling	July 9. 1 mile S. E. Arnolds Park. 4 others in family	July 22. Same burrow	Only 1 other member of family in. 11:00 A. M.
141914 Juv.	July 14. 2 miles E. Spirit Lake. 3 others in family	July 22. Same burrow	1 member of family and another juv. in nest.
251181 Imm. Able to fly	July 17. 2 miles E. Spirit Lake. 3 others in family	July 21. Same burrow; 2 others of family also.[2]	9:25 A.M.
251125 Imm. Able to fly well	July 18. 1:30 P. M. 8 miles N. Spirit Lake	July 18. 2:00 P. M. In burrow 25 ft. from one occupied at 1:30 P. M.	Burrow also contained 3 imm. unbanded birds
36256A[1] Imm. Able to fly	July 24. 1 mile S. E. Arnolds Park	July 25. Same	
36257A[1] Imm. Able to fly	July 24. 1 mile S. E. Arnolds Park	July 25. Same	

[1] Taken from same burrow at same time.

[2] Also July 23 in burrow 20 ft. away with the one missing on 21st.

I am indebted for help in banding operations to Mrs. Stoner, Dr. Willis DeRyke and Mr. George E. Potter, while through Dr. A. K. Fisher of the Bureau of Biological Survey I secured identifications of the insects found in the burrows. I would also acknowledge assistance in furnishing professional equipment to the Graduate College of the State University of Iowa through the kindness of Dean C. E. Seashore.

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TRYING TO TAME A GREAT HORNED OWL.[1]

W. J. BAERG.

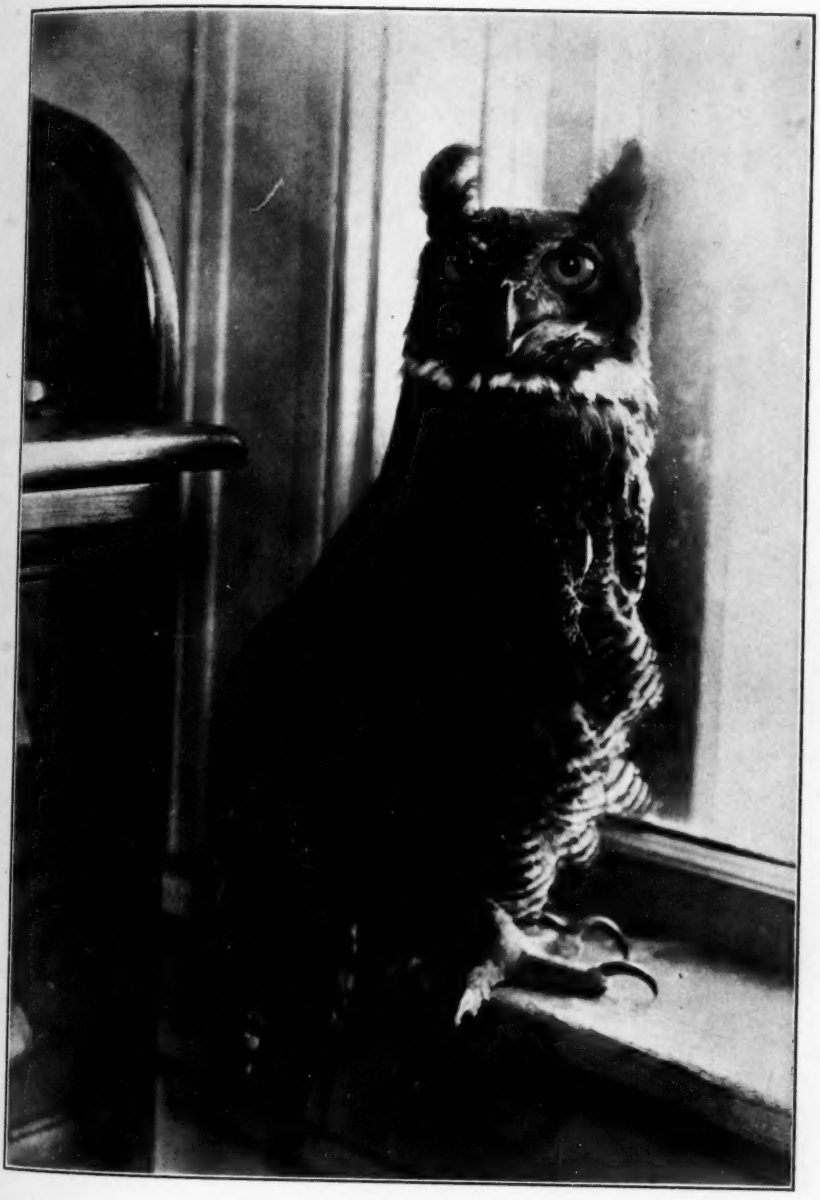
Plate IX.

THE Great Horned Owl, according to Dr. A. K. Fisher, is in disposition fierce and untamable; in strength and courage inferior to none of our rapacious birds. It is so savage and seemingly so devoid of the confidence usually shown by birds of prey kept in confinement, that it is with the greatest difficulty that it can be tamed even when taken young from the nest. It is morose and sullen, lacks affection for its keepers and often will fly viciously at anyone who attempts to handle it or enter the apartment in which it is confined. Dr. Fisher qualifies this statement by a "notable exception." Two Owls belonging to Dr. Coues were kind and gentle and showed no impatience when handled.

Last spring when two boys from near Harris, Arkansas, came into my office with a young Great Horned Owl and offered to sell it for a dollar and twenty-five cents, I took this opportunity to learn whether or not this Owl can be tamed. This was on April 9, and the Owl was probably about six weeks old (assuming that the eggs are laid late in January or early in February and hatch in four weeks). It was completely in nesting plumage and about seven inches tall when standing erect.

It seemed to have very little fear of me or anyone else, submitting readily to petting, carrying about, etc. Once in a while it would attempt to bite, but being rather slow at it, this seemed more like play. In a day or two I learned that although the Owl would not remain content in an empty box, it was well satisfied with the corner of the window ledge near my desk. This in spite of the fact that in general the chief requirement for a resting place in a room is the highest object in that room. Apparently the window ledge was so satisfactory because it offered a good view over the road near-by, where various vehicles passed frequently. From here is also a good view of the athletic field and the various sport activities claimed much of the Owl's attention. Finally the numerous Sparrows, aided by a few Robins, Brown Thrashers, Blue-

[1] Research paper No. 24, Journal series, Univ. of Ark.



CAPTIVE GREAT HORNED OWL.

birds, and Warblers, that would from time to time gather on the near-by light wires, would bring pleasant variation in the day's amusement. On this window ledge the Owl would sit very contentedly for a good while, often for four or five hours. Although I would frequently leave the office and sometimes be out for an hour or longer, it would almost always remain at its place. However, if at any time there passed a lumber wagon, more noisy than the average, the Owl would promptly take flight and land on top of a bookcase reaching nearly to the ceiling. A few days after the Owl was secured, it was taken before a class in Nature Study, about 50 students, placed on a box standing on the desk, and it remained there in good order during the hour while the class was in session. Observing the numerous faces in the room apparently provided very good entertainment. For quarters, we secured a cage, about three feet high, three feet long, and twenty inches wide, made of one-inch mesh chicken-wire. A stick hung in the meshes of the wire provided a perch that seemed quite suitable.

It is said that the young Great Horned Owls grow rather slowly. This, if I may judge from my limited observation, is due to the light appetite of the young birds. It was a matter of considerable surprise to find that the young Owl would eat only a small meal of raw meat, about three ounces, once a day for three or five days and then refuse food for a day. In order to keep it in the best of health and provide for normal development, food was offered every day except Sunday (when fresh meat was not available). When it was about full grown it was fed every other day, and it would accept the food promptly and regularly.

For food, any kind of raw meat was acceptable, heads of Chickens were a delicacy. Cooked meat was accepted but once, and then apparently by mistake. The feeding habits are of unusual interest because they show more of the Owl's temperament than other activities. If a piece of meat at feeding time is held near enough so it can seize it with its bill, the Owl will do so; if it is held but a few inches farther away the Owl will not take it. If the head of a Chicken or a rat that has been killed in a trap is given, the Owl takes on a very wild attitude. When one approaches the cage after it has begun feeding, it ruffles its feathers and snaps its bill very noisily.

It is said that in zoological parks Owls are fed on live Chickens or birds from time to time to provide an opportunity for the special function of the crop, and that Owls fed on raw meat alone apparently cannot maintain a state of good health. By putting the meat ration on the excelsior covering the floor of the cage, the Owl takes in with the meat an appreciable quantity of the excelsior, and this, as I have repeatedly observed, is thrown out in pellets. Since the Owl's diet was varied somewhat with Chicken heads, now and then a bird or a rat, it cannot be said that raw meat alone is satisfactory; but there are good indications that this is true.

In securing a victim such as a rat, the Owl shows most vividly its cruel nature. Holding the rat by its powerful talons it gradually drives the claws deeper into the struggling victim. If the rat attempts to bite, the Owl retaliates with some vicious pecking. It may require five to ten minutes before the rat ceases to struggle, and the Owl regards all this with utter indifference.

According to accounts given by persons who have observed the Owl robbing a Chicken house, it will on entering the house take up a position on a perch near the intended victim. For a while it will sit still, then gradually proceed to push the Chicken off the perch. When the Chicken begins to flutter and fall, the owl quickly seizes it with its talons. In an attempt to verify this, I placed the Owl and a young Chicken (weighing about 3 pounds, which is also the weight of the Owl) in a screen house. At first the Owl was rather afraid of the Chicken; soon, however, it realized that there was nothing to fear. The two were left together all the afternoon, and apparently got along very well.

Referring now to the general behavior of the Owl, it must be said that it has a degree of tamability. At no time has it tried to run away from me. At all times have I handled it without gloves, and if this is done carefully and observant of certain precautions, the Owl will not even struggle to get out of my grasp. It will allow all manner of petting, although at times it may, in a playful way, peck at one's hand so as to draw blood. It has shown no evidence of being fierce or savage. It will attack when it feels driven to do so in self defense. Thus on one occasion, when I handled it in a very awkward manner, it struck my left hand with its talons in such a way that I wore a bandage for several days.

The Owl is easily frightened. If it can get away, it will do so; if not, it will act in self defense. When provided with some food such as a head of a Chicken, the Owl is very easily excited, apparently fearing the loss of the choice morsel. Its conduct in the presence of strangers is very conclusive evidence that it knows its keeper. It has some confidence in the keeper, for it is entirely quiet when I am near the cage; whereas a stranger will cause it to make a desperate effort to escape from its confinement.

On numerous occasions, such as petting or when I apply a nail file to its upper mandible, or to the claws, the Owl utters a plaintive cry, sounding somewhat like: "killi killi." The characteristic hooting I have, until recently, but seldom heard. Lately I have, by imitating its call and agitating it gently (turning its perch, etc.), prompted it to hoot many times, although in a rather subdued tone. This, I think, is the nearest approach it has made to playfulness.

As a pet it rather resembles a parrot and has very little of the playful nature usually required of pets. Its handling is not very unlike that of bees. Though bees are not domesticated, they can be handled if the beekeeper understands bee beahavior. The Owl's tamability goes further, however; it knows its keeper and usually accepts whatever he wishes to do with a good deal of tolerance.

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SCHIÖLER'S 'BIRDS OF DENMARK.'

BY GLOVER M. ALLEN.

THIS splendid quarto volume[1] is the first of a projected series of eight, to appear at yearly intervals, in which the author proposes to give a careful summary of our knowledge of the birds of Denmark, and to include as well, those of the Faroe Islands, Iceland and Greenland. Since the A. O. U. 'Check-list' includes Greenland, the present work is of particular interest to American ornithologists, not only because it treats of Greenland birds from a European viewpoint, but also because it brings forward much new material accumulated from Greenland in recent decades in Danish collections, particularly those of the author and of the Zoological Museum at Copenhagen. Moreover, many Danish species are of holarctic distribution, so that a consideration of their habits on the eastern side of the Atlantic is of general interest.

Lest its cost and the fact that it is written in a somewhat unfamiliar tongue should prevent its being as well known to American ornithologists as its importance deserves, a résumé of its contents is here given.

The plan of the work includes, first, a brief survey of Danish ornithological literature; then follows a short general account of avian anatomy, well illustrated with original figures; and in a third chapter a summary list of the birds of Denmark with a brief statement of the occurrence of each in that country. A valuable part of this chapter is supplied by the late Herluf Winge in a review of the species found as fossils or (more especially) those whose remains occur in artificial deposits of prehistoric times. With Chapter IV begins the detailed account of the species. Following the general sequence of Gadow and of Fürbringer, the author commences with the Anseriformes, and in the present volume treats of the

[1] Danmarks Fugle med Henblik paa de i Grønland, paa Færøerne og i Kongeriget Iceland forekommende Arter. By E. Lehn Schiøler. Bind I. Indledning og Andefugle (Anseriformes). Gyldendalske Boghandel, Nordisk Forlag, København, 1925. 37.5 × 28 cm., pp. 1–552, pll. 1–98 (50 colored), 159 text-figs., and many unnumbered cuts. Price 250 Kroner (about $62.00) a volume.

surface-feeding Ducks, the Swans, Sheldrakes, and Geese, leaving the diving Ducks and the Mergansers for the succeeding volume.

In the chapter on literature a synopsis of the more important publications by Danish writers on birds is presented, which, with the author's pertinent comment, comprises nearly 190 pages and really constitutes an historical review of the progress of ornithology in northwestern Europe. Danish ornithology may be said to have begun with Caspar Bartholini, his son Thomas, and his brother-in-law Ole Worm, who with others at the Royal University early in the seventeenth century founded the first "Natural-Theater" or museum of natural-history in Denmark. This was largely an anatomical collection with little of birds beyond various crania, sterna and beaks, as well as eggs of Swan and Ostrich. Sundry articles by Thomas Bartholini in these early days aimed to clear away the mists of ignorance and superstition from popular beliefs about birds. One gives an account of the examination of a supposed oviparous cock, another exposes the fallacy of foretelling the severity of a coming winter from the color of a Goose's breast-bone, while a third disproves the belief, then widely current, as to the origin of certain Geese from barnacles by showing that nests and eggs of these birds were discovered by Barenz in Spitzbergen. Most of the ornithological papers of this period were anatomical and helped to lay a foundation for a knowledge of avian structure. Most famous, however, is the book, 'Museum Wormianum', 1655, describing the private collection of Ole Worm, and embracing many interesting notes on birds. Wormius was the first to publish a figure of a Bird-of-Paradise showing its feet, and thus exploded the popular belief in its 'apodal' nature, for the specimens that first reached Europe from the Far East were trade-skins, native-made, with the feet quite removed, which gave rise to the notion that the birds spent their lives on the wing, never coming to rest on a perch. A Great Auk mounted in this collection was figured with a narrow white ring about the neck, which it seems was really a bright metal band, and not, as some later writers supposed, a peculiarity of plumage. Apparently the first list of Danish birds is found in a manuscript of Peter Syv, preserved in the University Library at Copenhagen and dating from about the end of the seventeenth century. With the eighteenth century (the Linnéan period) clas-

sification and the discrimination of species claimed their share of attention as well as anatomy. The names of sundry Danish naturalists are prominent in the development of ornithology in these times, as Brünnich and Pontoppidan. The latter had a large collection of mounted birds, and in his 'Danske Atlas' (1763) published the first printed list of Danish birds, comprising 180 species, listed by their common names. It was perhaps really prepared by Brünnich whose 'Ornithologia Borealis' appeared in the following year (1764). Other important works of the period include O. F. Müller's 'Prodromus of Danish Zoology,' and Forskål's works on his expedition to the Near East. Of well-known authors of later times, the writings of Fischer, Reinhardt, Steenstrup, Kjærbölling, the brothers Winge, of Andersen and Mortensen are given brief review; and finally a list of titles pertaining to Danish birds to the close of 1923, brings the subject to date, with a mention of the founding, in 1906, of the Danish Ornithological Union, which has done much to forward interest in the study and protection of the local species.

Of the excellent chapter on avian anatomy little need be said beyond pointing out the large contribution of the author in the way of new and original figures, carefully drawn from Danish specimens, representing skeletal parts, tongues, tracheæ, and other details of superficial and internal anatomy of many species. Each figure is taken from a particular specimen, the data for which are given, and many are reproduced in color. One important point brought out by the author may, however, be emphasized as an interesting and apparently new contribution, namely, the correlation between the development of the supraorbital glands and the habit of feeding in salt water by diving or at least immersing the head. These glands, which form a dark-brown, more or less crescent-shaped mass over each eye in many water-birds, are exposed upon removing the skin of the head, and are found to be best developed in those that feed by diving or dipping in salt water. They are larger, for example, in sea Ducks than in fresh-water species, and are very well developed in Loons and Auks, and to a certain degree among shore-birds. The duct from these glandular masses leads into the nasal chamber and the probable function of their secretion would seem to be the formation of a film that would

exclude water from the bird's nostrils when the head or bill is immersed. An apparent exception is found in the Gannet in which the glands are small, but in this group it is recalled that the nostrils are closed over in the adult.

Chapter III, with its summary and analysis of Denmark's Ornis, includes a brief sketch of the geology since the Ice Age, but one misses an account of its present topography and main floral features which would have helped to an understanding of the distribution of the birds. From the Danish peninsula 324 species and subspecies are at present known, which compares well with the list for the British Isles, of 475. Of the Danish birds, 178 are known to have bred in the country within historic times, though of these some 15 are nearly or quite gone as breeding species. Four species (Great Auk, Pelican, Capercaillie and Great Black Woodpecker) undoubtedly bred in the Stone Age but are now extirpated. Of special interest is the list of casual visitors. It includes 14 species that have come presumably from the west and southwest (America, the Atlantic, British Isles, and Holland), 43 of southern or southeastern derivation (Mediterranean region, southern Russia), and 26 of northern, northeastern or eastern origin. Five American species come in the first category, namely, Blue-winged Teal, Bartramian Sandpiper, Dowitcher, Sparrowhawk, and Yellow-headed Blackbird; in the second are such southern birds as the Egyptian Vulture (*Neophron*), the Bee-eater and *Pastor roseus*, while in the third are, in addition to purely Arctic species, sundry birds of China and Siberia. Here belong also the Long-billed Nutcracker and Pallas's Sand-grouse, whose periodic invasions reach western Europe. With passing years the list of such occasional visitors increases, until, as the author remarks, it seems that there is no quarter of the globe so remote but that it might not eventually be represented in Denmark, for "birds have wings and use them without regard to rules of zoögeography." From the collection of records of such sporadic occurrences and invasions over a long course of years, we may eventually be able to tell what "the rôle of the accidental" (to quote Dr. Grinnell) really is, in the matter of colonizing or of extending a species' range.

The portion of Chapter III, by H. Winge, on the fossil and prehistoric bird remains of Denmark, brings out many interesting

points in the history of the fauna. Beyond the remains of Eider, Old-squaw and Ptarmigan in post-tertiary beds (the last not known since glacial times), the species discussed are those whose bones are found in kitchen-middens of human origin. These deposits, from the artifacts contained, may be approximately dated as of Old or New Stone Age, Bronze Age, and Iron Age to historic times. The Old Stone Age may date back 5–6000 years B.C. In accumulations of this period were found bones of 49 species of birds, including 9 of Ducks, 2 of Swans, 2 of Geese and Grebes, 2 Loons, a Pelican, Crane, Gulls, the Great Auk, 5 kinds of Hawks or Eagles, besides an Owl, the Capercaillie, the Great Black Woodpecker and a few smaller species. The evidence of the Capercaillie and the Black Woodpecker (species long extinct in Denmark) indicates that in former times, when the land was more elevated than now, there were evergreen forests in which these species found a congenial home, but which have given way to mixed or deciduous forests, typical of lower elevations. The bones of the Great Auk from kitchen-middens of these days were in some cases of birds so immature that they may have been bred at no great distance. In accumulations of the Newer Stone Age (2500–1500 B.C.) bones of domestic animals appear. The bird bones comprise much the same species, but the Great Auk is not included, nor does it occur in the still later middens of the Bronze Age (1500–400 B.C.).

With Chapter IV, begins the systematic treatment of the species, with original definitions and keys for the major groups as well as for the species of each. For each genus the author points out the anatomical characters and illustrates these by original figures, carefully drawn, of skulls, sterna, tracheæ or other details. The great worth of these discussions is that he has considered anew the value of these characters, bearing in mind the opinions of other recent workers, so that his conclusions, based on ample material, have more than ordinary weight. Thus, he does not agree with Hartert and Phillips in placing all the palæarctic surface-feeding Ducks except *Spatula*, in the single genus *Anas*, though acknowledging that their relationships are very close. He would recognize *Mareca*, characterized by the short, high, and narrow bill, as well as *Nettion* and *Dafila*, though all are closely related to *Anas*. The three last differ considerably, as he shows, in the conformation of

the bones forming the roof of the mouth in the ethmoid region. The Gadwall he retains in a special genus, *Chaulelasmus*, while *Querquedula* he shows is very like *Spatula* in its cranial characters, though both he considers distinct genera, chiefly on the basis of the great development of bill and tongue in the latter.

In the particular account of each species are given: first (in smaller type), a brief synonymy, then the common names, Danish, Swedish, Norse, Icelandic, Faroese, English, French and German; then follows a diagnosis of the species and a short statement of its manner of occurrence in Denmark, in the Faroe Islands, Iceland and Greenland. In larger type, follows a detailed discussion of the various plumages, and, beginning with the downy young, the changes are followed through for each sex till maturity. A noteworthy feature of these careful descriptions is that they are based upon individual specimens, the ages of which are approximately known from a study of the bones and genitalia. Extensive series of measurements, from specimens of comparable age, are summarized in tables and the various plumages are very fully illustrated by plates in color and in black-and-white half-tone, representing many of the actual specimens described. It may safely be said that no such series of careful measurements and detailed plumage descriptions and illustrations has yet been published. The general distribution, migration, courtship, nesting, food and other habits are then discussed, with particular reference to Denmark, and the addition of pertinent comment and occasional sketches of courting postures. A freer use of side-headings would often have been helpful to the reader in finding particular subjects in this portion of the book.

A few points of special interest to American ornithologists may be mentioned.

The occurrence of the American Green-winged Teal is shown to be on the western, not the eastern side of Greenland, in correction of published statements. Schiøler regards this as a subspecies of *Nettion crecca*, following Winge, Hartert, and others, and brings forward new evidence based on a large series of specimens, to indicate that intergradation occurs in the color characters generally used to define the two forms.

Among some ten specimens of Pintail from Greenland, only one

tallies fairly well with the description of the supposed American subspecies, *tzitzihoa*, the others appearing to be typical *Dafila acuta*. Although the author feels that his American material is insufficient to permit of a final decision, he suggests that a more thorough study as to the validity of this race is highly desirable.

Of the Mallard, no less than four races are recognized as occurring in the Danish possessions: (1) the typical form which is found, in Denmark, both as a migrant and as a breeding bird; (2) the large Northeastern Mallard (*archiboschas*) of the White Sea region, a winter resident in Denmark; (3) the Iceland race (*subboschas*), resident in Iceland; and (4) the Greenland Mallard (*conboschas*). The characters of these races, external as well as anatomical, are pointed out on the basis of so large a series of carefully collected birds, that the author's opinion as to their validity must be given more than usual weight. The account of the Greenland Mallard (the only race recognized by Dr. Phillips in his recent monograph) is undoubtedly the best in print concerning this well-marked subspecies. Its plumages are carefully analyzed and average measurements of over 150 specimens are tabulated. The cranial characters are very distinctive, for in addition to the large size, the skull is extremely narrow between the orbits in correlation with the greater development of the supraorbital glands, which in turn are more prominent in this race since, as a resident bird, it spends so much of the year in salt water coastwise. A series of plates illustrates most satisfactorily the cranial, sternal, and color differences in these races.

Of the American Blue-winged Teal there is one Danish record (1886) and two for Greenland. The American Widgeon is also once recorded from Greenland (May, 1898).

Three species of Swan occur in Denmark, of which Bewick's and the Whooping Swan are regular winter residents and the Mute Swan a breeding as well as a winter bird. Of the Whooper, the author recognizes a smaller race on Iceland, of which some are resident while others reach Danish waters as winter visitors. It is this race, *Cygnus cygnus islandicus* (Brehm), that is occasionally found in Greenland. Measurements are given of seven Greenland birds, all of which, although in white plumage, were with a single exception, inactive sexually, as appeared from dissection. The

plumages and soft parts of all these species of Swan are well shown in color.

The Geese are treated in the same thorough manner. No less than ten forms of *Anser* and four of *Branta* are included, in addition to the Swan-goose, *Cygnopsis*, an eastern species, of which two females, apparently wild birds, were taken January 12, 1918, at Kalvebod Strand.

Schiøler regards all the White-fronted Geese that breed in Greenland as belonging to the large race *gambeli* and gives a series of average measurements based on many birds taken on both coasts of that country as well as figures of the cranium of this and typical *albifrons*. The race *gambeli* occurs on migration in the Faroes and, in some numbers, in Iceland but has not been identified in Danish waters where only the typical form is as yet known, and then but seldom as a migrant.

The Pink-footed Goose (*Anser brachyrhynchus*), is included in the A. O. U. 'Check-list' as accidental on the east coast of Greenland, doubtless on the strength of Winge's record of 1892. But more details indicate that it is a regular breeding bird there. Thus, on Scoresby Sound, flocks undoubtedly of this species were seen as late as August 18 and 27 in 1891, and in June of the following year others, at the same place, one of which was secured and sent to the Zoological Museum at Copenhagen. Thereafter the species was seen there every year, and on July 25 two goslings were shot and in late July adult birds with moulted flight feathers. In recent years a number of birds from this part of Greenland, especially Carlshavn (about 74° north latitude), have been sent back to Denmark by the East Greenland Company, some in breeding condition. A comparison of these with typical Pink-footed Geese reveals no racial differences.

The status of the Snow Geese (which the author refers to the genus *Anser*) is still uncertain as far as Greenland is concerned. According to the measurements given by Winge for two adult and two immature birds, the recorded specimens seem referable to typical *hyperboreus* (the Lesser Snow Goose). More recently, however, the Zoological Museum has received two specimens that seem undoubtedly of the larger race, *nivalis*. The first was shot with three young at Cape York, August 24, 1911; the other, an

adult male, was killed in the Umának district on September 10, 1919. The skull of the former is figured.

The supposed occurrence of the typical Canada Goose in Greenland is based on the record by Winge of a bird taken at Disco in 1864. This specimen is still preserved in the Zoological Museum, and has been reëxamined, together with a pair in the same collection collected June 10, 1914, in the Umának district. All these are said to be unquestionably of the small race, *hutchinsii*, which is thus to be considered the breeding bird of Greenland, where, however, it is rare.

The Barnacle Goose is now known to breed regularly on the east coast of Greenland, though in the southern part of that country it appears as a migrant only. Descriptions and measurements are given of the fine series in the Zoological Museum.

Concerning Brant, the author has much original matter to contribute. Typical *Branta bernicla bernicla* is common on migration and as a winter resident in Denmark, rarely occurring on passage in the Faroes. The form commonly found in the latter islands is the white-bellied race, which likewise is the one that occurs as a migrant in Iceland and is the breeding bird of Greenland. He differs from Jourdain in the recognition of the races of this Goose, and regards the breeding ground of the typical form as northern Asia from Taimyr to Nova Zembla. In Kolguev, the breeding birds are intermediate in respect to dark and light belly, but all those from the breeding grounds on the east and west coasts of northern Greenland are the White-bellied Brant. The technical name of this race, should be, according to Schiøler, following Lönnberg, *Branta bernicla hrota* (O. F. Müller). The birds of this type occurring as migrants in Iceland and the Faroes, and as winter residents on the Danish coasts, are presumably from Greenland. In Denmark they are outnumbered by the wintering birds of the typical race.

These are but a few of the many interesting details given in this work. The volume itself is beautifully printed and artistically finished. Although the large page and the weight of a coated paper render it somewhat heavy, they have given the means of reproducing its wealth of illustrations in a sumptuous and satisfactory manner. The latter are the work of Danish artists,

Larsen, Heilmann and Scheel. The many text-figures of skulls and other anatomical details are beautifully drawn and mostly of natural size allowing of close comparison with specimens in hand (though in no case is the actual scale given). The colored plates, reproduced by a three-color half-tone process, are large enough to include several figures each, so that illustrations of different plumage-phases may be readily contrasted. No attempt is made in these to reproduce a background of picturesque surroundings with the figures of birds, but the latter gain in clarity thereby and their poses are for the most part altogether natural. The half-tone plates in black-and-white are beautiful examples of printing.

Not least in point of interest is the glimpse given in the publisher's prospectus of the modest author himself, seated in the comfortable study of his private museum, surrounded by his books and collections. The extent of the latter, gathered through many years of unremitting effort, may be judged when we learn that the material brought together for the critical study of races and plumages of Anseriformes, includes such enormous series as 100 Swans, 1100 Eiders, 400 Teal, often with the skeletons as well as the skins. Of the present volume it is safe to say that no other single work of like scope has yet appeared in which each species has received such thorough and critical treatment based on the painstaking study of adequate series, well illustrated, as this on the Avifauna of Denmark. The work when completed will stand as a splendid monument to the industry and learning of its author and is one that must be taken into careful consideration in any review of American birds.

Museum of Comparative Zoology,
Cambridge, Mass.

GENERAL NOTES.

Kittiwake in Ohio.—A specimen of the Kittiwake (*Rissa t. tridactyla*), was taken by me at Buckeye Lake, Licking County, Ohio on November 7, 1925. The specimen, an immature female, is preserved in the Wheaton Club collection at the Ohio State University.

This appears to be the only record of the capture of this species in Ohio, although there are two sight records from the northern part of the state, mentioned by Jones in his 'Birds of Ohio' (1903).—MILTON B. TRAUTMAN, *618 So. 5th St., Columbus, Ohio.*

A New Name for Saundersia, Dwight.—The name *Saundersia*, recently employed by me for a subgenus in the Family Laridae (Bull. Am. Mus. Nat. Hist. LII, 1925, p. 81), is preoccupied in entomology, and therefore, is not available. To take its place I propose *Saundersilarus* after Mr. Howard E. Saunders + Larus.

This is just one more of the "inadvertencies" or "oversights" (as we like to call our blunders) that always seem to dog the steps of nomenclators. It is impossible to explain fully their psychology, although there is usually no good reason for their occurrence. One can only offer an apology and regret a careless contribution to the instability of zoological names.—JONATHAN DWIGHT, *American Museum of Natural History, New York, N. Y.*

A Blue Goose (Chen caerulescens) in Massachusetts.—On November 3, 1925, at Duxbury Beach, Mr. William C. Paulson shot an adult male Blue Goose. This is the fifth record for Massachusetts. Mr. Paulson has generously presented the specimen to the Boston Society of Natural History.—CHARLES W. TOWNSEND, *Ipswich, Mass.*

Blue Goose (Chen caerulescens) in South Carolina.—At about 10:30 o'clock on the morning of October 26, 1925, we saw two adult Blue Geese flying southwestward above Edingsville beach on Edisto Island, South Carolina, following the coast line. The birds passed us at a distance of about 200 feet, flying at a height of about 50 feet. Even with the naked eye their markings were plainly visible and field glasses revealed nearly every detail.

The only other record of the Blue Goose in South Carolina was reported by Mr. Arthur T. Wayne in 'The Auk,' Vol. XXXV, No. 4, Oct., 1918. This was a mounted specimen seen by Mr. Wayne in a small collection of birds at the Santee Gun Club, Santee River, S. C. It had been shot by Mr. Frank Carnegie on the preserves of the Club about ten years previously.

It is perhaps worth noting that five days before we saw the two Blue Geese on Edisto Island, heavy storms of wind and snow had swept the Central States, across which the bulk of the Blue Goose flocks migrate southward.—CHARLES LIVINGSTON BULL, *Oradell, N. J.*, HERBERT RAVENEL SASS, *Charleston, S. C.*

White-fronted Geese in Virginia.—On November 23, 1925, Mr. William E. Ross of Elizabeth, N. J., killed two immature White-fronted Geese (*Anser albifrons gambeli*) not far from Tully William's dock, Redhead Bay, a part of Back Bay, Virginia. Mr. Ross presented me with the two birds, and they were turned over to the American Museum of Natural History, New York.—CHARLES A. URNER, *613 Cleveland Ave., Elizabeth, N. J.*

Whistling Swan Wintering at Branchport, N. Y.—Before it was fairly light, the morning of January 15, 1924, I noticed a large bird in the lake at the north end of the sand-bar. In the half-light it appeared to be dark colored and I took it to be a Canada Goose. It was still there at noon and one look with my binoculars showed it to be a Whistling Swan (*Cygnus columbianus*). There were fourteen Black Ducks feeding near it and when they flew out a few rods, the Swan followed them.

In the afternoon it was back again in the shallow water and I went down to the shore, where, screened by the cat-tails, I watched it as long as I cared to stay. Sometimes floating and sometimes walking it moved back and forth in the shallow water, head and neck submerged a good share of the time as it probed the bottom. Then it came out of the water and up on the bar where it gave itself a shake and raised and closed its wings. I noted the black legs and bill and in certain lights was sure that I could see the yellow spot at the base of the bill. It was soiled white in color, with head and neck decidedly brownish, darker on the head.

January 16 it was not seen, but the morning of the 17th it was in its usual place, at the north end of the bar, and it remained there all day. The morning of the 18th it was feeding in company with a flock of twenty-four Black Ducks. It moved about very slowly, much of the time with head and neck submerged, searching the bottom. When looking about it carried its head high with neck stretched up vertically, and it is only when it carries its head to the water that the neck shows the graceful curves.

January 20. While watching the Swan to-day, when the sun struck it just right I was sure that I could see the yellow spot at the base of the bill. The bill also showed some flesh color.

January 30. The Swan has now been here fifteen days and always in the shallow water at the north end of the bar and around the mouth of the inlet. To-day, when I went down, there was a flock of American Mergansers at the mouth of the inlet with which the Swan was keeping close company. It always seemed to enjoy the company of Ducks of any species that happened in its neighborhood. When I came out in sight, the Mergansers flew off down the lake, and the Swan away out in the lake. Later in the day it was close in shore, watching a flock of Pheasants feeding where I had dumped a bag of mill screenings at the edge of the water.

The morning of February 9 was still, with thermometer at 10° F., ice

forming rapidly all over the lake and small areas of open water here and there; and in one of these was the Swan. My work claimed me for an hour, and when I returned the open water had all been closed with ice and the Swan was gone. I went down to the lake and out on the bar to the channel, which never freezes entirely over even in the very coldest weather, and here I found eight Mergansers. The open water was about a half mile away and there at the edge of the ice was a flock of ten or twelve Black Ducks and farther out was the Swan.

Continued cold weather closed the lake to the end of Bluff Point, eight miles, and I did not expect to again see the Swan; however, by February 13, south winds had broken the ice, and driven it back to within a mile of the head of the lake and opened up a strip along the bar connecting with the channel and here in the afternoon I found it.

February 17. The lake was all closed again with ice, excepting the channel in which were the Swan, several American Mergansers and Black Ducks, three Goldeneyes and three Canvasbacks.

The bottom here in the channel is washed gravel and is practically devoid of vegetation. When here the Swan was probing the bottom nearly all of the time and on examination I found it to be covered with bowl-like depressions about 18 inches to 2 feet across and 4 to 6 inches in depth. There were none of these depressions where the water was more than two feet deep and I was unable to determine what the Swan was searching for.

Every day it spent the time probing the bottom or floating on the channel, leaving only when I approached to put out more feed or when the fishermen who were on the ice came close. One day my boy went out towards it and it climbed out on the ice and walked away stopping every time the boy stopped.

March 2, I took down feed for two days and left a bag full on the ice at the edge of the water. The ducks, as soon as I got a little distance away, came back and lit in the water but the Swan seemed to be afraid of the bag of feed and after circling around several times flew away down the lake. Later in the day I removed the bag of feed but it did not return until nearly dark the next day! On this same day (March 3) a Swan was seen on Canadaigua Lake at Canandaigua, 25 miles northwest of here which I believe was this same bird.

After this we had considerable soft weather, March 18 being bright and thawing nearly all day, snow all gone except for patches here and there in the shade. There was much more open water in the channel where were now 43 Black Ducks, a Red-breasted Merganser, 10 Canvasbacks, 2 American Goldeneyes, 2 Canada Geese and the Swan. I was quite close before the Swan and the Black Ducks left, all flying off down the lake. The Swan turned and came back passing directly over me as a last farewell for it turned again and far down the lake alighted with the Ducks and was not seen afterwards.

It was here from January 15 to March 18, more than two months and in all but the first three weeks, had had a restricted and very poor feeding ground and must have led a rather precarious existence, though it always seemed capable of strong and sustained flight.—VERDI BURTCH, *Branchport, N. Y.*

Colorado Ducks.—Through the kindness of Mr. Victor Kennicott of Denver, I was able to examine a Scoter which was killed at the Kennicott Duck Club, near Longmont, Colorado, on October 18, 1925; which proved to be, on examination, a female American Scoter (*Oidemia americana*). The species is rare enough in this state to warrant putting the specimen on record: There have been but five previous records of this bird in Colorado, so far as I can learn.

Mr. Merritt W. Gano, Jr., of Denver, Colorado, thoughtfully saved for me a fine male American Golden-eye (*Glaucionetta clangula americana*) which he had collected at the Milton Duck Club, Platteville, Colorado, on December 4,1925. The prevailing Golden-eye in Colorado is, in my experience, the Barrow's, in fact it is so many years since I have seen what I take to be the American Golden-eye, in the state, that I had become doubtful of its actual occurrence here. This bird was shot from a flock of Golden-eyes, so it is possible that others of the same kind may have been in the flock.—W. H. BERGTOLD, *Denver, Colo.*

Wood Ibis and Egret in Hopkins Co., Ky.—On August 24, 1925, I received word from a friend that some large white birds with black wings, which he called "White Storks," had been seen near Madisonville. Desiring to identify them, I made a trip to the place mentioned: A large swamp filled with dead trees near a large creek. But I saw no "storks." On my return, however, I passed through a small swampy woods, part of which consisted of a pond, dry at one end, studded thickly with rotting tree stumps. Above the water, sitting on one of these snags, I found three immature Wood Ibises (*Mycteria americana*). Needless to say, the scene was beautiful. I attempted to get a specimen but failed.

Between August 26 and 31, flocks of this species were seen on the swamp, and one specimen, a fine immature male, was obtained on August 30. This bird had thirty-eight fish about one and one-half inches long in its gullet.

On a small pond about a hundred yards from a farm house west of Madisonville, I found these birds again. They fed there daily between August 25 and September 2, in the early morning. On account of the extreme drought of the summer, the pond was nearly dry, and it was an easy matter for the Ibises to get fish. They were last seen there September 2.

On August 30, at this same pond, I saw an adult Egret (*Casmerodius egretta*). The bird was in fine plumage considering the season of the year.

So far as I can find, these are the only records for the two species in Hopkins County. There are four records for *Casmerodius egretta* in the

state. These are:—Pindar, Hickman County, Ky., (1888); Garman, East Cairo, Ky.; Beckham, Nelson Co., Ky.; J. W. Fowler, Fairfield, Ky. (1888).

The Wood Ibis is recorded by Garman as an irregular summer resident but such is not the case in our immediate section of the state. Dr. L. Otley Pindar records it as common when present at all, and this exactly applies to my observations in Hopkins County.—JAMES SUTHARD, *5515 Kimbark Ave., Chicago, Ill.*

The Little Blue Heron (Florida caerulea) Near Berwyn, Penna. During the Season of 1925.—Heretofore the status of this species in southeastern Pennsylvania has been that of a summer straggler, a shy, solitary and conspicuous creature, harried from place to place until destroyed, It is therefore a pleasure to record, supplementary to Sutton's report of its abundance on July 25 on the streams near Coatesville (Auk, xlii, 584), the presence of a colony unpersecuted throughout the past summer, near the headwaters of the Darby creek; an event for which we are doubtless indebted to the prolonged and unprecedented drought in some parts of the South. The site is ideal, a reflooded brickyard swamp several acres in extent, in the midst of a neglected farm; the pond with semi-submerged swamp willow snags, impassable borders and a timber screen in the rear, forming a most prolific frog, snake and fish nursery. Though I had been fully informed of the persistence of this flock through June and July, it was not until August 8, that I, in company with Guy L. Eadie, a fellow ornithologist, had leisure to enjoy at length the view of these graceful birds in action and at rest against a background of green-grey foliage, the whole reflected in the water below, with most artistic effect. Some of the birds, among which were two in the dark or adult plumage, were flying about in the grove while many in the white or immature phase were perched upon dead trees over the water, mostly in groups and upon one occasion the dead branches of one small tree bore eight pure white birds. Others were wading the shallows, while a few sat motionless and solitary in partly submerged willows in the foreground and were approached within thirty feet, thanks to a screen of bushes along the dam breast. The birds appeared unmindful of our presence.

This species was not the only fish-eater present, for I noticed the Mallard (*Anas platyrhynchos*), Green Heron (*Butorides virescens virescens*), Night Heron (*Nycticorax nycticorax naevius*), Kingfisher (*Ceryle alcyon alcyon*), and a single Egret (*Casmerodius egretta*). The last perched on a log with several Little Blue Herons, showed clearly the relative size of the two species, especially when it flew to the shore to wade about the shallows; it was seen as late as August 23 and constitutes my only local record since August 7, 1918.

This colony was frequently revisited by myself and friends up to and including August 29 and the Little Blue Heron was found present in numbers estimated at from 25 to 30 individuals; a conservative approxima-

tion, since a son of the caretaker of the estate, a high school student, informed me that he had counted 34 birds in flight from one pond to another led by the two dark birds, and I also learned from him that a pair had been present the year previous.—FRANK L. BURNS, *Berwyn, Pa.*

The Egret at Wildwood Lake, Dauphin County, Penna.—I have just learned that the Egret (*Casmerodius egretta*) which was liberated at Wildwood Lake, near Harrisburg, Dauphin County, Pennsylvania, on July 17, 1925, was last seen in this region by Mr. Merrill Wood of Harrisburg, on September 12 and 13, 1925. He watched for the bird on subsequent dates, but it was seen no more.—GEORGE MIKSCH SUTTON, *Game Commission, Harrisburg, Penna.*

Little Black Rail in Illinois.—I am led, through Mr. Frank M. Woodruff's note published in 'The Auk,' for January, 1926, as well as through recent correspondence with Mr. Henry K. Coale of Highland Park, Illinois, to believe that my only record for the Little Black Rail (*Creciscus jamaicensis stoddardi*, presumably) for Illinois may be of considerable interest.

On May 30, 1910, while a number of us were walking along a stream which flows almost through the town of Eureka, Woodford County, Illinois, a Little Black Rail jumped up from the short marsh grass at our feet and fluttered away. Thinking that it was a young Redwing I pursued, and after a long chase, during which the Rail alighted and flushed about a half dozen times, succeeded in frightening it from the vicinity of the grass where it was most difficult to follow.

Finally I captured it, and was amazed to find a red-eyed, beautifully spotted Rail in my hands. I took it home, where I kept it for two weeks. It died, probably of starvation. Unfortunately the poor skin, which I preserved at the time, was lost upon our moving to Texas.—GEORGE MIKSCH SUTTON, *Game Commission, Harrisburg, Penna.*

Little Black Rail in Illinois.—In the January 1926 issue of 'The Auk,' Vol. XLIII, p. 90, Mr. Frank M. Woodruff reports the capture of a Black Rail in Chicago, and remarks, "Since Nelson's record of June 19, 1875, . . . I can find no authentic record of the taking of the bird" (in Illinois). Mr. Woodruff has evidently overlooked the fact that in 'The Auk,' Vol. XL, 1923, pp. 88–90, Mr. Henry K. Coale records a specimen of this bird, now in the Field Museum, taken at South Chicago, Illinois, May 30, 1916, by H. L. Stoddard. This specimen is the type of the new subspecies described and illustrated in the article by Mr. Coale as *Creciscus jamaicensis stoddardi*, and is supposed to differ from the Jamaican bird and also from the Californian form.

There is another record for Illinois, though the bird was not taken. Isaac E. Hess ('Auk,' Vol. XXVII, 1910, p. 31) found a nest of two eggs of this species in the Embarras Swamp, Champaign Co., on May 30, 1901. The eggs were left undisturbed in order that a full set might be

taken, but unfortunately a cow destroyed them.—PIERCE BRODKORB, *Evanston, Illinois.*

Occurrence of King Rail about New York City in Winter.—On February 1, 1926, during a rather severe northeast hail storm, the writer had the good fortune to pick up a dead King Rail (*Rallus elegans*), at Hunts Point, in the lower Bronx region, New York City, found by the merest chance while crossing the tidal marsh. The plumage was heavily coated with ice, but otherwise the bird was in fairly good condition, barring a few damaged feathers on the side of the head. After thawing the bird was limp, and seemingly quite fresh, with no evidence whatever of decomposition about it. It proved to be an adult male, and Mr. W. DeW. Miller of the American Museum of Natural History, to whom the specimen was brought, examined it, and was able to have the skin preserved for the Museum's collection. The stomach was practically empty. An injury to the left-wing, disabling the bird, probably hastened death from exposure.

The date is, of course, abnormal, and the fact that the bird was found on a tidal salt marsh is notable in view of the species' partiality to fresh-water swamps. This is to my knowledge the second local record; the first being a sight identification of an imdividual of this species which spent at least a week in a deep fresh-water swamp, directly east of the Jerome Reservoir, N. Y. City and which was observed there April 20–21, 1925 and several days thereafter, by A. D. Cruickshank, the writer, and others.—JOHN F. KUERZI, *Bronx, N. Y. City.*

Red Phalarope at Sea 100 miles west of Gibraltar.—On October 25, 1925 a Red Phalarope (*Phalaropus fulicarius*) flew on board the Isthmian Line Steamship "Steel Seafarer" when about 100 miles due west of Gibraltar. It was found dead, was skinned by the writer and is now in the collection of the Museum of Comparative Zoology at Cambridge, Mass. The bird was a male with minute testes and the stomach was empty save for some grit. This record is of interest in connection with the distribution of the species as given by Meinertzhagen in 'The Ibis' for April, 1925, and helps to fill the gap between his October record for the southwest coast of England and his November record for the Straits of Gibraltar.—HERBERT FRIEDMANN, *32 Garden Place, Brooklyn, N. Y.*

Black-necked Stilt in Winter on the North Carolina Coast.—On December 3, 1925 a Black-necked Stilt (*Himantopus mexicanus*) was killed by Mr. Peters of the Narrow's Island Shooting Club on the Club property near Poplar Branch, Currituck Co., N. C. It is being mounted for the Club collection.

Dr. Geo. Bird Grinnell who is President of our Club writes me that there is a specimen of this bird which was killed in North Carolina in the Museum of Trinity College, Durham, N. C. The bird killed by Mr. Peters was an adult male in very fine plumage. The bird must now be

rare on the North Carolina coast as none of the old baymen in the neighborhood had ever seen one. I thought therefore that its occurrence, particularly so late in the year, was worth reporting.—ROBERT T. EMMET, *48 Washington Ave., Schenectady, N. Y.*

A New Genus, Acentrortyx, proposed for Francolinus nahani Dubois.—The African Francolins, usually grouped in two genera, *Francolinus* and *Pternistis*, show such a variety of color-pattern and so much diversity in the relative size of the bill that it would seem almost natural to subdivide the groups further, as has been done by Mr. Austin Roberts in his list of South African birds.[1] Certainly *Francolinus lathami* (type of the genus *Peliperdix* Bonaparte) departs widely in structure from such a species as *F. levaillantii*, but a graded series of species could be laid out which would tend to bridge such gaps.

One feature, however, in which virtually all the species of *Francolinus* and *Pternistis* agree—so far as I am aware—is the presence, normally, of one or two metatarsal spurs in adult males. Nevertheless, in *Francolinus nahani* Dubois[2] such spurs are never to be seen, nor is there even a modified scale at the point where they usually arise. I have carefully examined eighteen adult specimens in the collections of the British Museum, of Sir Frederick Jackson, of Lord Rothschild, of the U. S. National Museum, the Congo Museum, and the American Museum of Natural History. Eight of them were sexed by the collectors as males.

In other respects this Partridge does not depart widely from the genus *Francolinus*. The bill is not quite so weak as in *F. lathami*, and the rectrices number fourteen, as usual in *Francolinus*. The only additional feature of note is the bareness of the skin around the eye. But the complete absence of spurs alone may be regarded as of generic importance, and I propose the new genus *Acentrortyx*, with *Francolinus nahani* Dubois as its type species.—JAMES P. CHAPIN, *on Board S. S. "Majestic" in Mid-Atlantic.*

Arctic Three-toed Woodpecker in West Chester Co., N. Y.—On October 12, 1925, my husband and I saw a female Arctic Three-toed Woodpecker (*Picoides arcticus*) on our place at Mount Kisco, N. Y., I believe that no other has been recorded from West Chester Co., and that this is an early date for that latitude. The bird was working hard on some small dead or dying white birch trees and allowed us upon this and several subsequent occasions to approach within a few feet of her. The presence of our dog did not bother her but the Downy Woodpeckers resented the intrusion and did all they could to drive her away. We saw her on November 6 and again on December 11 when we found her on a heap of dead birches that had been dug up and thrown on the ground.

On December 15, 1925 I saw a solitary Redpoll in a flock of Goldfinches and on December 12, a single Evening Grosbeak near our feeding station. —MARCIA B. TUCKER, *733 Park Ave., N. Y. City.*

[1] 1924, Ann. Transvaal Mus., X, pp. 121–122.
[2] 1905, Ann. Mus. Congo, Zoologie, I, fasc. 1, p. 17.

Sapsuckers Feeding Sap to Young.—Near Fortine, Montana, during the summer of 1923, I observed a pair of Red-naped Sapsuckers (*Sphyrapicus varius nuchalis*) gathering sap to feed to their young in the nest. A regular tree-route, followed alternately by the male and female, included a quaking aspen, a large alder, and a large willow, in which borings had been made. The birds flew directly from the nest to the aspen, and gathered the sap that had accumulated since the last visit; then flew to the alder and to the willow, repeating the process; and finally flew back to the nest, without hunting for insects. Occasionally the male would vary the process by catching a few flies from the air, eating some and carrying some into the nest. When the supply of sap at one of the trees ran low, one of the birds would drill new holes above the uppermost old ones.

Several times during the absence of the birds I examined the sap-wells, and in no case found insects caught on the sticky cambium, or even hovering near. Nor did the birds look for insects when they approached a tree; instead they alighted immediately in position to obtain the sap, and thrust their bills well up in the upper edge of the "flowing wells," often turning their heads sidewise in order to pry beneath the bark.—Winton Weydemeyer, *Moccasin, Montana.*

Long-eared Owl capturing Ruffed Grouse.—The Long-eared Owl (*Asio wilsonianus*) is reputed to be among the most beneficial representatives of its family. However it seems that as in the case of most predatory species, certain individuals sometimes develop exceptional food-habits. Such a case has recently been brought to my attention.

Near Firstfork, Cameron County, Pennsylvania, Mr. Chauncey E. Logue, Trapping Instructor of the State Game Commission found within one week evidence of the killing of two Ruffed Grouse by the Long-eared Owl. On December 24, 1925, an Owl was flushed from the shadow of a low hemlock, where a partially eaten Grouse was found. Three days later and not far away, the same kind of Owl (possibly the same individual) was found eating another Grouse. This time the Owl was shot and sent in for identification. In both cases there was evidence that a struggle had taken place, not only in the boughs of the hemlock where feathers clung, and in the grape vines where the Owl had evidently first attacked its prey, but also in the snow where the Grouse had struggled. Absence of all tracks of quadrupeds shows that no mammal caught the Grouse in either case; and a logical inference is that if a Great Horned Owl had captured the birds, most of their bodies would have been eaten, or the larger species of Owl would at least have been on guard. The Grouse were both torn at the neck, but most of the feeding had been done about the head and in the visceral region.

These Grouse-killing proclivities are probably due either to a local abundance of Grouse or to a great scarcity of other food, for it seems hardly possible that so light a creature as the Long-eared Owl should customarily kill creatures so much heavier than itself, although such a

habit is not without a parallel among the other birds of prey.—George Miksch Sutton, *Pennsylvania State Game Commission, Harrisburg, Pennsylvania.*

Crow Alighting on the Water.—While on a Duck hunting trip on December 19, 1925, on Seneca Lake, an unusual incident occurred which was witnessed by myself and my two friends who were in the blind at the time.

We had watched the Crows from a nearby roost flying over the blind to the western shore of the lake and in the afternoon when the Crows returned we took passing shots at those which came within range. While looking out over the water for one which might prove a suitable target our attention was attracted to a bird flying very low over the surface and straight towards us. We were all certain it was a Crow but it suddenly stiffened its wings and dropped into the lake! About ten seconds elapsed before it took flight again and continued on its course coming directly for our blind as before. During the time the bird was in the water I did not take my eyes from it. As it drew nearer we all prepared to shoot and not until it had flown directly over the stools and around one side of the blind did we realize that it *was* a Crow and not a Scoter or a Cormorant or any of the many other things we had thought when we saw it drop into the water.

I have endeavored to explain the incident to myself in many ways—that the bird might have lit on a log or some other piece of floating debris; that he might have been flying all of the time and only appeared to have been resting on the water; or that he might have been one of the water birds already mentioned—but all my theories are unconvincing. The water was not rough enough to prevent him from being in view all the time and if he had alighted on some floating object it would have been apparent. As for the identification I can only say that I have studied birds for fifteen years.

I have since talked with Mr. Louis A. Fuertes and he has told me of twice seeing a Great Blue Heron alight in deep water. I would be glad to hear from any observers who have had similar experiences or who can offer any other explanations to my observation.—R. M. Chase, *Sigma Phi Place, Ithaca, N. Y.*

The Blue Jay in eastern Massachusetts.—I cannot do better than begin this screed with a quotation from Mr. Burleigh's article on "Breeding Habits of Georgia Birds" in the last July 'Auk.' In commenting on the Blue Jay Mr. Burleigh says that "in the North it is a bird of the woods, with a natural curiosity in the ways of man but suspicious of any intimacy and during the breeding season shunning civilization as much as possible." He goes on to say that the Jay in the South apparently has lost "this shyness" and is as much a bird of the town and even cities as the English Sparrow. Well, this, too, is just what the Blue Jay is in this section of

the North (at least some individuals) although there are still plenty of Jays here which stay "wild as hawks" within their native wild-wood and breed there.

It was not ever thus. An apparent change of habit has happened to the Blue Jay in these parts, and it has come about largely within the memory of the older ornithologists. Far from "shunning civilization as much as possible" in the breeding season, the Blue Jay (at least some of the tribe) is then the boldest, or tamest, or most familiar (as you choose) of birds, and makes its nest close to our houses or even on them—as over doorways, around cornices, etc.

I am an old man; and I find in an old notebook this entry for Dec. 30, 1875: "Today a Blue Jay rendered bold by hunger came into the yard and searched for food in a heap of straw." (The winter of 1874–75 will be recalled as an unusually hard winter, with low temperatures and much snow, when we had with us many Snowy Owls, Crossbills, Grosbeaks, etc.) In other words, I, a very young ornithologist, thought that the visit of this wild woodland bird to the yard, even on a bitter winter's day, was worthy of note. And yet we lived in those days at the "South End" of Worcester—a sufficiently countrified section of the city, where in spring the migrating Sparrows filled the bushes, and in summer the Kingbirds nested in the orchards. (I recall that once I saw in my father's yard a wild Cardinal.)

Today the Blue Jay in this part of the state, at least, is almost as much a bird of the town as of the woods. I cannot say how extensive this change of habit is. I speak only for eastern Massachusetts, and not for all, even, of that. I hope that this will bring forth information from other of the older ornithologists.

Mention of the familiarity of the Blue Jay is made as far back as 1881 in an editorial in the 'Ornithologist and Oölogist.' The nesting of a very tame Jay in Uxbridge, this state, is described. The nest was in an evergreen at the very office door of the local woolen mill. Mention is also made of other nests of tame Jays—one in plain sight in a small evergreen by a roadside "almost in a public thoroughfare"; and of another, near a greenhouse door, the old bird meanwhile sitting indifferent on her eggs. The editorial says that there is something remarkable about the nesting habits of the Blue Jays, for it is not uncommon for them to build close to houses, and concludes: "Out of the breeding season they are decidedly the wildest bird in New England."

This is decidedly not true of the Blue Jay of to-day, of many of our towns in eastern Massachusetts—in or out of the breeding season. The bird, usually screaming at the top of his voice, impudently sits around on roofs and fences, or investigates our garbage barrels, as if to the "manner born," as indeed he often is. But except for this familiarity about our houses, he is the same old Jay—impudent, curious, prying, jeering, hollering, the same old rascal, but so gay with his beautiful blues that even the enraged ornithologist cannot withhold his meed of admiration.

I find in an old notebook for 1906, under date of May 9, in Georgetown, the story of a Blue Jay's nest (with five eggs of the beautiful buffy style) which was built out in the open, away from the woods, in a willow tree near a house. Another rather unusual situation was in May, 1910, in Plymouth, where I found a Jay's nest in a hedgerow close to houses on Summer street, just over the fence, in fact, from the sidewalk where people were continually passing. Miss Frances Vibert, writing in June, 1911, from Hartford, Conn., describes a Jay's nest "with young birds about big enough to fly" on Beacon Street in that city, which was built "on the turn of the gutter pipe just below the eaves of the verandah roof." Aaron C. Bagg writes from the western part of our state (Holyoke, April 18, 1925) that "a pair of Blue Jays are nesting across the street in a neighbor's yard, high up in a cutleaf maple." In Ware, in the west-central section of Massachusetts, I have known of Jays nesting in the street trees or in yards close to houses; and Mr. F. C. Moulton, of Ware, tells me of a Blue Jay that built in a small tree close by the open window of the noisy loom-room of one of the large local mills. In the Dorchester section of Boston a Jay nested a year or so ago in the ornamental vines just over the front door of an occupied house. But why prolong the tale? Similar reports of the familiarity of the Blue Jay, in and out of the breeding season, come from New Bedford, Brockton, Quincy, Malden, Newton, and other places in thickly-settled eastern Massachusetts.—J. A. Farley, *52 Cedar St., Malden, Mass.*

Changed Habits of Blue Jay at Philadelphia.—Mr. Farley's note prompts me to publish my similar experience in Germantown, one of the northern suburbs of Philadelphia. When studying birds in Wister's woods and vicinity from 1880 to 1897, the Blue Jay was a very wild species occurring only during autumn flights, but upon returning to reside in the old neighborhood after some twenty-five years absence I found the bird's habits totally changed. I was surprised to find a pair of Jays present about the end of May, 1922, acting as if they were located for the summer. Later, I detected them constructing a nest in a beech tree close to the railroad station about ten feet above a path along which hundreds of persons passed to and from the trains, and not over fifty feet from the tracks. Next year and the year following they nested again in the same spot but in different trees once only thirty feet from the railroad tracks, and showed no apparent fear of trains or passing passengers.—Witmer Stone, *Academy of Natural Sciences, Philadelphia.*

The English Starling at Chicago, Illinois.—On December 21, 1925, Mr. Roderick Van Trump described to me four "strange" birds that he and his brother had seen in Oak Park the day before. The birds in question had been observed feeding on the ground at close range and the size, actions and *yellow bills* placed them beyond doubt as English Starlings (*Sturnus vulgaris*). These boys are enthusiastic Boy Scouts and I know them to

be familiar with our common birds and also fairly keen observers. However, since Mr. W. I. Lyon has trapped and banded two Starlings at Waukegon, Ill. on December 27, 1925, there seems to be no doubt whatever about my Oak Park record being correct. For some years past we have been on the lookout for the Starling to reach Chicago, but we hardly expected them to first appear during a winter of much snow and sub-zero temperatures like the present.—CHRESWELL J. HUNT, *Chicago, Ill.*

Foster Parentage.—Wishing to learn whether the Cowbird had any inherent adaptability for foster parentage not possessed by other species we tried an experiment involving three kinds of birds.

In one of our nesting boxes, ten feet up on a stake, a Bluebird was sitting on four eggs; a Song Sparrow had her nest with four eggs in a rather exposed position on the ground in a cranberry bog very near our house; in some pine woods nearby a Veery was incubating three eggs; her nest well secreted from any observer, human or otherwise.

We knew that the Bluebird was due to hatch her eggs in a few days and thought that the Sparrow was well along in incubation, the Thrush we were uncertain about; however, on July 6 we took three eggs from the Bluebird, and, using water colors spotted them lightly with brown and gave them to the Sparrow in exchange for three of her eggs.

The remaining Sparrow egg was given to the Thrush.

This last move was made principally to check up on the hatching, it not being convenient to examine the Bluebird's nest.

On the 7th, much to our satisfaction, the Bluebird's eggs were pipped and the Sparrow sitting tight; we immediately examined the Thrush's nest and were surprised to find all the eggs in it at the point of hatching; from this data we knew that the Bluebird's complement must also be coming out.

This was a very fortuitous culmination, as all coming out together not only reduced the liability of neglect or abandonment on the foster mother's part, but also made it much easier for us to keep tab on what happened.

On this day (7th) a hard rain was falling and we only visited the Sparrow and Thrush once. The latter was excessively shy, so much so that never once could we observe her leave the nest.

On the 8th at 7 A. M. the Sparrow had one Bluebird hatched, and both of the remaining eggs pipped clear around their shells. In common prudence no further examinations were made that day beyond driving a stray cat from the vicinity; and right here is where we neglected a most necessary precaution, we should have put a screen of chicken wire net over the Sparrow about a foot above the nest.

On the 9th all was progressing well, the Sparrow sitting close and leaving her little charges with reluctance, the Thrush with four callow young, but so timid that we thought it best not to visit her more than once per day.

A cat that persisted in hanging around the cranberry bog near the Sparrow was eliminated, and later, three more cats were put out of commission.

This day we made our first examination of the Bluebird.

By standing on a stepladder my assistant could open the box, four young were asleep in the nest. The female Bluebird was very solicitous and re-entered the nest while we were in sight.

On the 11th all was proceeding finely, the Sparrow was sitting over her young to keep off the direct sun heat. More down was showing along the feather tracts, and they opened their mouths wide for food.

On the 16th, the little Bluebirds had their eyes partially open, and their Song Sparrow stepmother was assidiously caring for them when we heard a Crow calling from a treetop close by the bog. Fearing mischief, we later hastened down to the nest to find that the black rascal had eaten the little Bluebirds.

Nothing disturbed the other nests and their young arrived at banding age and were duly banded; the last to leave the box was a Sparrow which remained two days after his foster brother, or sister, Bluebird and the two other Sparrows had flown. The mother Bluebird was as solicitous over this remaining fledgling as though it was her own offspring.—WALTER B. SAVARY, *Wareham, Mass.*

Status of the Yellow-headed Blackbird (Xanthocephalus xanthocephalus) on the Atlantic Seaboard.—The following data were gathered upon my finding an adult female Yellow-headed Blackbird on Monhegan Island, off the Maine coast, on September 11, 1925. The material was accumulated from various sources and to the twenty-one records published by Dr. H. C. Oberholser in 'Bird-Lore' for 1921, I have added eleven others.

Eastern Quebec (1)—September 4, 1878.

Maine (2)—August 17, 1882; September 11, 1825.

Vermont (1)—August 27, 1916.

Massachusetts (5)—October 15, 1869; September 10, 1877; month (?), 1878; September 8, 1897; September 17, 1917.

Connecticut (3)—Late July, 1884; June, 1887; July, 1888.

New York (1)—September, 1899 (250 miles from coast).

New Jersey (2)—Month (?), 1890; September 1, 1917. (Where are two other questionable records for N. J.—See Auk, Vol. XXIX, pp. 102–3. But doubtless Dr. Stone rejected them after examination.)

Pennsylvania (7)—August, 1851 (Collected by John Krider. Apparently the earliest eastern record.); (Dr. Jackson mentions a flock seen on the western edge of the Alleghany Mts. in 1857. If the record be authentic, it represents the only instance of more than two birds being found together that I have discovered among eastern observations); May 3, 1880; September 15, 1885; March 25, 1890—a pair); April 26, 1895 (the last three 300 miles inland); August 22, 1896.

Maryland (3)—September 10, 1891; September 18, 1893; October 1, 1894.

District of Columbia (1)—August 29, 1892.

Virginia (2)—August 29, 1912—two birds, a pair.

W. Virginia (1)—Spring, 1888.

So. Carolina (1)—April 17, 1884.
Georgia (1)—September 23, 1893.
Florida (1)—One record mentioned by Coues, no date—but obviously earlier than 1874.

An analysis of this list may reveal an interesting point or two.

The following table, for instance, discloses the chronological frequency: (The numerals represent the number of records within the indicated periods.)

13, 1851–1889
12, 1890–1899
0, 1900–1911
5, 1912–1917
0, 1918–1924
1, 1925

The absence of records between 1900–1911 and 1918–1924, and the fact that only six birds have been reported in the last quarter century, seem worthy of note.

Of the 32 records, 7 are of the spring, 2 of July, 20 of the fall, and 3 are unplaceable. The most arresting spring occurrence is that of Mr. H. S. Kirkpatrick of Meadville, Crawford Co., Pa., who writes in a letter, "I had the good fortune to get [query, collect?] a fine pair of Yellow-headed Blackbirds on March 25, 1890." Now Meadville is almost exactly in the same latitude as Chicago, which is near the normal eastern limit of the bird, where it is due about April 25.

The fact that only 7 of the 32 records occur south of Pennsylvania has probably little significance: northern ornithologists have been more numerous and better organized.—WARNER TAYLOR, *619 N. Frances St., Madison, Wisconsin.*

Pine Siskin fifty miles out at Sea.—On November 7, 1925, a Pine Siskin (*Spinus pinus*) flew on board the Isthmian Line Steamship "Steel Seafarer" when about fifty miles east of Nantucket. It settled on the foremast and several times when I approached it, the bird flew off, circled around the ship and then came back. It did not seem at all tired. It stayed on board until within a few miles of Boston harbor when it flew off, headed for shore. There was only a light wind blowing that day, hardly enough to blow a bird 50 miles out to sea.—HERBERT FRIEDMANN, *32 Garden Place, Brooklyn, N. Y.*

Marriage Relations of A Red-eyed Towhee.—Since the opening of a bird banding station, Towhees have become almost as familiar about the house as Catbirds and Song Sparrows and have even given some opportunity to observe their family life.

On April 17, 1924 I found a pair of Towhees feeding at our banding station, Waynesville, N. C. and on April 19 banded the female, no. 239502. The male was very wary, but was captured on May 1 and numbered

239505. He was a very handsome bird with eyes unusually red. The pair continued to feed at the station and were left undisturbed, as I hoped they might bring their young to the station. No brood appeared, however, and after the nesting season the male never allowed the female to feed with him. On August 19 she was found dead in the orchard, probably from natural causes, as no injuries appeared. The male continued to feed at the station until after the moult, when he disappeared.

On April 26, 1925 the male was recaptured and subsequently came about the station with No. 238833, a female banded on April 23, which was readily distinguished by the fact that she wore her band on the left leg. She was allowed to feed undisturbed and soon formed the trap habit, but the male stayed at a safe distance.

Early in June the female began to carry crumbs away, but the male was still afraid of the trap. The young then followed the parents to the station, one male and three females still too young to feed themselves. To my surprise the female very soon lost interest in the brood and left the feeding to the male. Under these circumstances any man will understand why the male threw caution to the winds and led the whole brood into the trap, where they stood around him in a ring to be fed. For fear the young might hurt themselves by fluttering about the trap, they were not caught until they could be taken separately. The eyes at that age are singularly beautiful, of a soft brownish gray closely matching the first plumage. The iris changes with the first moult.

On June 22 the male abandoned them, but allowed them to feed at the station, which they continued to do until full grown when, as usually happens, they disappeared.

About August 1 the program was repeated. For some time the female had been carrying off crumbs, but she and the male seemed on such bad terms it was believed she had a new mate. They both came, however, with the new brood of two males and one female, but again the female deserted. She was seen to feed one young male only, while the male parent fed all three. To her he showed decided animosity, even driving her away when she fed the young male. She soon lost all interest in the young, while the male as before fed them for about two weeks after their appearance at the station. Whether or not he was governed by a Freudian complex, he certainly had a partiality for the little girl, feeding her two or three days longer than the others, and showing considerable weakness in weaning her. He would thrust a morsel into the ever gaping mouth, then turn away, but after him she hurried, unabashed. Sometimes he would just stand looking at her hopelessly or would even give her a feeble peck, then weaken at her entreaties and feed her again.

This second brood fed at the station until they had acquired adult plumage, which the female did much sooner than the males. She was taken in adult plumage on September 2, though her eyes at that time were still gray. One young male, No. 357106, had the iris red on September 5,

but still showed some juvenal plumage when captured on September 23. The adult female also molted much earlier than her mate.

Towhees are abundant here in winter, but so far no individuals taken in summer have been recaptured in winter.

This one pair raised seven young to full growth, a high record which may be due in part to the protection and the abundant food of the banding station.—MARION A. BOGGS, *R. F. D. Waynesville, N. C.*

A New Race of Rufous-crowned Sparrow, from North-central Lower California.—*Aimophila ruficeps lambi*, new subspecies. CAPE COLNETT RUFOUS-CROWNED SPARROW. *Type* and type locality: male adult; no. 46357, Mus. Vert. Zool.; Colnett, lat. 31°, Lower California, Mexico; October 28, 1925; collected by Chester C. Lamb; original no. 5146.

Diagnosis.—In general characters similar to *Aimophila ruficeps canescens* Todd (Condor, XXIV, July, 1922, p. 126) of the San Diegan subfauna, but decidedly darker—less ashy brown, more slaty—in general tone of coloration; light feather edgings on upper surface scantier and of darker tint; sides of head, neck and body, and dark band across chest, darker; concealed portions of webs of remiges and rectrices slaty brown rather than a lighter tone of brown; bill, feet and claws, in the dried specimens, decidedly darker, slaty rather than translucent flesh-color. These differences hold quite as well in comparison with *Aimophila ruficeps ruficeps* of central California, since the darkness of the latter in contrast with the pallor of *canescens* lies in the direction of warm browns and tans rather than slate. The darker webs of the wing and tail feathers in *lambi* and the slatier color of the "soft parts" set off the specimens of that race from nearly every specimen at hand of *ruficeps*, *canescens*, *obscura*, or *sororia;* the mass effect is striking. In general size and proportions, *lambi* is as in *ruficeps*. The bill is appreciably smaller than in *sororia* and *obscura*.

Range.—That portion of northwestern Lower California which lies west from the Sierra San Pedro Martir to the Pacific Coast. Life-zone chiefly Upper Sonoran, but also Lower Sonoran locally. Specimens examined, 6, from the following localities, all near latitude 31°; near Concepcion, 6000 feet; Valladares, 2700 feet; near San José, 2500 feet; San Telmo, 600 feet; Colnett, near sea-level.

Remarks.—Rufous-crowned Sparrows proved elusive in direct proportion to the eagerness with which they were sought. As usual they kept to a low, sparse, dry-hillside type of chaparral within which, when pursued, they would keep to the ground and give no audible clue to their individual whereabouts. I, personally, shot just one, near San José, although I heard their well-known voices in the distance there and at other collecting stations almost daily. The other five birds were taken by Mr. Chester C. Lamb; and I wish here to acknowledge, and to memorialize in the name chosen for the new race, Mr. Lamb's high qualities as a field collector. Although hours in the aggregate were put in after *Aimophila*, I do not believe the small number of examples taken to be an index to the real

numbers in the region; the type of country inhabited by *lambi* is very extensive.

In this connection I wish to state my belief that the form described by Dickey and van Rossem (Condor, xxv, July, 1923, p. 128) from Santa Cruz and Santa Catalina islands, California, is a perfectly good one; only I think the trinomial better to be used for it: *Aimophila ruficeps obscura*. While I quite approve of the logic of these authors in contending for the binomial, current practice is overwhelmingly to the contrary. I now feel that for island forms, even though perfectly isolated from the mainland or other insular stocks, and interbreeding hence impossible of occurrence, we had better fall in line with prevailing custom and use the trinomial to indicate intergradation through individual variation or even to indicate relatively slight degree of differentiation.

I might record here also the fact, as just determined from examination of the materials in the Museum of Vertebrate Zoology, that Todd's *Aimophila ruficeps canescens* is a good form, coinciding in range quite exactly with the confines of the San Diegan subfaunal area. Skins showing the characters as ascribed by Todd to *canescens* are before me from San Diego, Dulzura and Campo northwest through Orange, Riverside and Los Angeles counties to Ventura, Ventura County.—J. Grinnell, *Museum of Vertebrate Zoology, University of California, Berkeley.*

Harris' Sparrow in Colorado.—Through the courtesy of Mrs. Anna Benson of Fruita, Colorado, I received an immature Harris' Sparrow (*Zonotrichia querula*) which was taken by Mrs. Benson at her home near Fruita on November first, last year. This Sparrow is quite uncommon in Colorado, and has never before, so far as I can recall, been taken on the western slope of the state. In fact it has occurred only casually on the entire western slope of the United States, and but a few times, having been reported from Oregon, Washington, and California. These facts make this record of more than ordinary interest.—W. H. Bergtold, *Denver, Colo.*

White-winged Junco in Pennsylvania.—On February 28 at Glenolden, Pa., I banded a bird whose plumage corresponds in every detail to that of the White-winged Junco (*Junco aikeni*). The breast and upper parts of this bird were a uniform blue-gray, a bit lighter in shade than the gray of the adult male Slate-colored Junco (*Junco hyemalis hyemalis*). The wings and tail were dusky, there were two unmistakable white wing bars showing strikingly against the dark wing background, and there was an unusual amount of white in the tail. We have kept a careful record of the appearance of the tail feathers of some two hundred banded Juncos, and find that in *J. hyemalis hyemalis* usually the two outer feathers on each side are white, although the second feather is sometimes edged with fuscous. The third feather is generally fuscous with a white streak of varying size on the inner vane, and the fourth feather is invariably a

uniform fuscous. In the Junco under consideration, the third feather was practically all white, with the exception of a very narrow dusky streak along the lower, outer edge, and a mottled dusky and white coloring across the upper part of the inner vane. The fourth feather was dusky with the upper portion of the outer vane and the shaft white. This corresponds with the markings of tail feathers of specimens of *J. aikeni* in the collection of the Academy of Natural Sciences of Philadelphia which I examined.

So far as I have been able to determine, the White-winged Junco has not been recorded east of Wisconsin. Yet it is the only species of Junco possessing white wing bars, and this particular bird was carefully examined in the hand. Considering the case of the Slate-colored Junco banded in Minnesota which was recently taken by Mr. Bowdish at Demarest, N. J., it seems within the realm of possibility that a White-winged Junco might also have strayed far to the east.—MABEL GILLESPIE, *Glenolden, Pa.*

The Lark Sparrow (Chondestes grammacus) in Maine.—Dr. Charles W. Townsend and I saw a Lark Sparrow, presumably of the Eastern subspecies (*Chondestes grammacus grammacus*) on the island of Matinicus off Penobscot Bay, Maine, August 12, 1925. We saw the bird clearly at close range through 8-power binoculars and identified it beyond question by its size, the white outer corners of the tail, and the characteristic head markings. Dr. Townsend is very familiar with the species, having seen eight or more individuals in the East besides many of the western subspecies in the West. The only record of the Lark Sparrow that I have been able to find for the state of Maine is that of a bird observed September 9 and 10, 1918, on Monhegan Island by Dr. John W. Dewis and recorded in Maynard's 'Records of Walks and Talks with Nature,' vol. 11, pages 35 and 40. This bird was identified by the late Judge Charles F. Jenney, who, I remember, saw the species at Monhegan in other years also, though he seems never to have published the records. The occurrence of the Lark Sparrow, which, according to the 'Check-List,' does not breed east of western Pennsylvania, on such outlying islands as Matinicus, Monkegan, and Grand Manan (see Townsend, 'Auk,' xli, 160) in the autumnal migration is worthy of note.—FRANCIS H. ALLEN, *West Roxbury, Mass.*

Dickcissel (Spiza americana) in Massachusetts.—On November 18, 1925, at noon, I found in one of my traps a bird which, after careful examination, I called a female Dickcissel. It corresponded in all respects to Chapman's description in his 'Birds of Eastern North America,' except that it had distinct yellow patches on the bend of the wings. Mr. Forbush, however, to whom I wrote about the bird, indicates that this is one of its characteristic markings.

As the occurrence of this bird in New England seems to have been very unusual of recent years, it may be worth while recording this instance in

'The Auk'—42774 is the number of the band on the leg of this particular bird, which made strenuous objection to wearing a bracelet.—WM. P. WHARTON, *Fiveoaks Farm, Groton, Mass.*

Note on the Nesting Habits of the Tree Swallow:—During the progress of an attempt to define the line in New England (if, indeed, any such exists) separating the area in which Tree Swallows (*Iridoprocne bicolor*) raise one brood, from the area in which they raise two broods, annually, the writer has noted the reluctance with which this species nests colonially in some localities and its willingness to do so in others.

If we erect a several-compartment bird-house on our premises on the theory that we shall get a colony of Tree Swallows because a few miles distant an acquaintance has been successful in so attracting several pairs, we are likely to be disappointed, although before nesting begins the birds may be seen flying in and out of every hole in the edifice.

Writers describing the nesting habits of this species usually find them most numerous where dead trees standing in or close to the water abound, for here old Woodpecker holes in which the birds nest are frequent. Many writers refer to such groups of nesting Tree Swallows as colonies, and perhaps most ornithologists will agree that they are such, but, accompanying such statements, I find no references to just how close together the nests are placed, or just what is meant by the word "colony." This has led me to inquire as to the extent compartment bird-houses are used colonially by this species, which in turn has raised the question of why one person cannot get more than a single pair of birds to occupy such a bird-house each season, while another succeeds year after year in doing so. I have had several reports from correspondents of "all compartments occupied," but in most cases investigation reveals that such occupancy has to do with conditions preceding actual nesting, for by June all the Swallows have left, barring a single pair. This, however, is not always the case, for occasionally each compartment in a bird-house, even of ten divisions, is occupied by a nesting pair. Such a case is reported by R. W. Means of Topsfield, Mass. A barrel erected in Peterboro, N. H., as a compartment bird-house for two seasons housed two pairs of nesting birds.

A lesser degree of colonization is common, and this more widely spaced nesting is due largely to circumstances referred to below. It is doubtless true that tree growth with its old Woodpecker holes will not permit the intimate nesting conditions present in a compartment bird-house. Man also, though he may have a hundred pairs nesting close by, seldom spaces his single houses nearer than ten feet apart. Mr. Edward F. Woods writes me that on his place at Bournedale, Mass., within an area of less than three-fourths of an acre he has had for years as many as 150 pairs of Tree Swallows nesting, many of the houses ranging from seven to twelve feet apart. George C. Atwell of Strafford, N. H., reports thirteen pairs nesting in an area of three-fifths of an acre, the two nearest nests being thirteen

feet apart. Thornton W. Burgess has sent me a photograph of a garage in Springfield, Mass., on which, during 1925, five pairs of Tree Swallows nested, each individual box being seven feet from at least one other occupied box. In addition, sixteen feet from the garage still another box was occupied.

These several examples of intimate nesting relations indicate in this species a disposition to nest colonially, and undoubted examples of their doing so are not infrequent. In primitive times they appeared to nest as close together as opportunity afforded. Had a given area of dead stubs had twice or thrice as many available sites, doubtless the birds would have been found nesting much closer together, and yet compartment birdhouses are often occupied by only a single pair of this species at nesting time. To a degree, which I fear is rather inadequate to serve as a basis for a conclusion, I have investigated a number of places where man has succeeded in getting these birds to nest colonially, and the evidence seems to indicate that the determining factor is the adequacy of a nearby feeding area, or areas, be they meadows (old, filled lakes), marshes or water, to furnish the necessary quantity of food for the young at the requisite period.—CHARLES L. WHITTLE, *Cohasset, Mass.*

Sycamore Warbler in Connecticut.—On May 18, 1925, Mr. Frank Novak, warden of Birdcraft Sanctuary at Fairfield, found a badly injured bird that, so far as descriptions go, is an adult male Sycamore Warbler, (*Dendroica dominica albilora*). This bird is now mounted and in the collection at the Birdcraft Sanctuary. It was reported to Mr. Forbush and recorded by him in his 'Bulletin' for May 1925, as a Yellow-throated Warbler. On my suggestion to Mr. Novak that the occurrence was of enough importance and interest to be published in a more permanent place, he granted me permission to send a note of it to 'The Auk.'

The bird was evidently injured by flying into wires along the railroad track at Fairfield, and not far from the Sanctuary grounds. The lores of the bird are clearly white, without a trace of yellow. The question of which subspecies the bird really represents, however, is determined by the locality from which it actually came, and since I am informed that occasional white-lored birds are to be found in the range of the Yellow-throated Warbler, it would seem more probable that this bird is such an individual, than a true Sycamore Warbler. Whichever subspecies it represents, it is the first Connecticut record of the species to be backed by a specimen. I believe there are one or two previous sight records of the bird by those who ought to know, but these have not been published.—ARETAS A. SAUNDERS, *Fairfield, Conn.*

Mockingbird at Marquette, Michigan.—From October 5 to 9, 1925, I observed a Mockingbird (*Mimus p. polyglottos*), in a small garden. This garden at Marquette in the Upper Peninsula of Michigan is surrounded by a white pine hedge, twelve feet high. The circumstances under which

the bird was discovered did not permit the taking of the specimen. I am familiar with the Mockingbird, because of residence in Texas, where the bird is abundant. Every possibility of it being an escaped cage bird has been carefully checked, and there is no reason to doubt that this is a bona fide record. This is probably the first recorded presence of the Mockingbird in the Upper Peninsula of Michigan, and perhaps the most northern record for Michigan or Wisconsin.

The Mockingbird is a rare summer visitant to southern Michigan, where it has been reported about twenty times in as many years. The northernmost record to date is that of Mr. Walter M. Wolfe, who observed one at Beulah, Benzie County, August 15, 1906. Barrows records this in his 'Michigan Bird Life' (1912). In Wisconsin, Kumlien and Hollister give Jefferson as its northern limit (Birds of Wisconsin, 1903). The writer did not find it in Green Lake County, Wisconsin, 1902–1912. (Bull. Wis. Nat. History, 1915.)—JOHN N. LOWE, *Northern State Normal School, Marquette, Mich.*

Bewick's Wren (Thryomanes bewicki bewicki) Wintering on the Coast of South Carolina.—I procured on December 27, 1925, in a yard next to mine, a fine specimen of this elusive bird. When first seen it was near the tidal creek by a large number of poles and, as I had no gun with me, I hastened home to get one and upon returning to the place I finally located the bird in a palmetto tree where I secured it.

Of the six examples of this rare coastal bird that I have seen near Charleston since 1907, this is the only one I have taken, the others having eluded me.

The records, all of single birds seen in October and positively identified but not taken, are as follows:

October 16, 1907, October 13, 1922, October 28, 1922, October 11, 1923, October 6, 1925. The specimen taken December 27, 1925, would seem to show that this bird may winter sparingly on the coast in widely separated localities, but at best it is one of the rarest birds found actually on the coast.—ARTHUR T. WAYNE, *Mt. Pleasant, S. C.*

Notes from Southwestern Michigan.—*Cardinalis cardinalis cardinalis.*—CARDINAL.—A pair of these birds have bred near Three Oaks, Berrien Co., Michigan, since 1923. I believe that there are only about five previous records of its breeding in the state.

Vermivora peregrina. TENNESSEE WARBLER.—On July 12, 1923, at Duck Lake, Muskegon Co., I saw a Tennessee Warbler feeding a young Cowbird which was but recently out of the nest. This is the first known instance of this bird breeding in Michigan. On June 23, 1924, I saw another which might have been nesting.

Seiurus aurocapillus. OVENBIRD.—On April 8, 1924, I saw an Ovenbird near Three Oaks; this is an extremely early record for this locality.

Thryothorus ludovicianus ludovicianus. CAROLINA WREN.—On both

June 30 and July 25, 1924, I saw a single Carolina Wren in the same thicket on the shore of Duck Lake, Muskegon Co. These form, I believe, the northernmost record for the state.

Baeolophus bicolor. TUFTED TITMOUSE.—I found this bird on April 17, 1924, and April 8, 1925, near Three Oaks, Berrien Co.—PIERCE BRODKORB, *Evanston, Illinois.*

Some Records from the Madison, Wis., Region 1923, 1924, and 1925.

1. *Colymbus holboellii.* HOLBOELL'S GREBE.—One specimen shot by a hunter and passed over to me for identification, November 15, 1925.

2. *Sterna forsteri.* FORSTER'S TERN.—One specimen collected May 14, 1923. On May 27, 1924, estimated the presence of ten Forsters among about 200 Common Terns—identification by note. On May 27, 1925, identified two further individuals by note.

3. *Pelecanus erythrorhynchos.* WHITE PELICAN.—Five birds of this species were seen by me flying low over Lake Waubesa at fairly close range on April 22, 1925.

4. *Aix sponsa.* WOOD DUCK.—One individual identified May 6, 1923.

5. *Oidemia deglandi.* WHITE-WINGED SCOTER.—One bird seen Dec. 3, 1922. These Ducks are decidedly uncommon on the Madison chain of lakes, a chain lying about eighty miles inland from Lake Michigan.

6. *Olor columbianus.* WHISTLING SWAN.—On April 5, 1925, six birds were seen on Lake Mendota; on Oct. 23, 1925, seven more were discovered on the same lake, two of them adult birds.

7. *Casmerodius egretta.* EGRET.—One specimen seen on May 30, 1925, in company with forty Great Blue Herons on Mud Lake. This bird is decidedly rare in our region to-day.

8. *Steganopus tricolor.* WILSON'S PHALAROPE.—Seven birds of this species, all acting like nesting birds, were found about the shores of the above Mud Lake on the same day, May 30. They showed great concern over our presence, calling plaintively and hovering solicitously over the wettish marsh grass. Later, on June 19, two of the birds were seen. Their actions paralleled those of the earlier date. We failed, however, to locate any nests.

9. *Philohela minor.* WOODCOCK.—This bird is rather rare with us now. But I was fortunate enough to discover three nests during the 1925 season, and to run across four of five individuals besides those nesting.

10. *Pisobia fuscicollis.* WHITE-RUMPED SANDPIPER.—Through the infernal drainage enterprise, ornithologically speaking of the regional farmers who own small ponds and tracts of marsh land and through the activity of the German carp, which have raised our lake levels to some extent, the Madison district is no longer frequented by the vast flocks of shore birds that, from all accounts, offered such interesting study even as late as a decade ago. One must go far afield to-day, must make special expeditions to favored ponds or brief shore-reaches, if he is to widen his knowl-

edge of the Waders. An ornithologist without a car must have seven-league boots. The present status of the White-rumped Sandpiper for our district has been in question. During the past three years I have made a special effort to throw some light on it. My experience has led me to believe that it is not especially uncommon. On May 21, 1923, I collected one specimen; on May 28, 1924, under favorable conditions, I identified six; on May 3, 1925, two; on May 30, I collected one, and on June 5, three among a flock of a dozen or so.

11. *Pisobia bairdi.* BAIRD'S SANDPIPER.—I collected one specimen from the above-mentioned flock of *fuscicollis* on June 5, 1925. This was the first specimen that local ornithologists had procured within some years. Apparently it is much rarer than the preceding species.

12. *Catoptrophorus semipalmatus inoratus.* WESTERN WILLET.—On July 2, 1925, Mr. John Gundlach of Madison called my attention to a bird of this species. I attempted to collect it and almost succeeded as several floating feathers attested. There would have been little point in taking the bird had it not been for a possible confusion with *C. s. semipalmatus.* I am entering it as *inoratus* because Dr. Oberholser seemed of the belief that the former was so unlikely as to warrant probable elimination. The bird is very rare indeed in the Madison region.

13. *Bartramia longicanda.* UPLAND PLOVER.—These splendid Plover are still not uncommon on the high meadows (altitude circa 1000 ft.) of the Mt Horeb and Dodgeville region from thirty to sixty miles west by south of Madison, tho in the Madison district proper they must be rated as decidedly uncommon. They appeared, however, to be more common with us in the spring of 1925. I saw one specimen on April 11; a second on April 25; and five in one field adjacent to a marsh and exhibiting the high excitement of nesting birds on May 30. This meadow was thirty-five miles north-east of Madison. Three of the same birds were seen in the same place on June 5, and two on June 19. A long search failed to discover the nests.—WARNER TAYLOR, *619 N. Frances St., Madison, Wis.*

Notes on North Carolina Waterfowl.—Various items published in 'The Auk' since the appearance of Pearson and Brimley's "Birds of North Carolina," in 1919, have added notably to knowledge of the Waterfowl of the State. These articles have dealt with so nearly the same list of birds concerning which the writer has fresh data that only one of them, Hutchins' Goose, seems to be an addition to the State list. Nevertheless, the publication of additional records for the species seems justifiable.

Alle alle. DOVEKIE.—Near Narrows Island, Currituck Sound, Dec. 1893, John Doxey (Mounted specimen in cabinet at Narrows Island Club).

Mareca penelope. EUROPEAN WIDGEON.—This species is certainly of regular if somewhat scarce occurrence at Currituck Sound. Some are killed every year. An unrecorded specimen is one I saw in the flesh at the Currituck Club, December 3, 1909.

Marila collaris. RING-NECKED DUCK.—In 1909, this Duck was regarded

as very rare on Currituck Sound, and in looking over hundreds of the smaller species of *Marila* I saw none of *collaris*, though *M. affinis* abounded. In recent years the Little Blackhead has practically ceased visiting the Sound and *M. collaris* has become common. This observation holds for the territory from Narrows Island, N. C. to Sand Bridge, Va. at the extreme upper end of Back Bay.

Harelda hyemalis. OLD SQUAW.—A male and a female are in the cabinet at Narrows Island, the latter bird being labelled Nigger Creek, January 21, 1918. C. A. Cass.

Branta canadensis hutchinsi. HUTCHINS' GOOSE.—Brant Island, November 15, 1888, W. H. De Forest (Specimen at Narrows Id. Club).

Anser albifrons. WHITE-FRONTED GOOSE.—Brant Island, Dec. 14, 1900, C. P. Fox (Specimen at Narrowa Id. Club).

Numenius americanus. LONG-BILLED CURLEW.—One seen on Currituck Beach, east of Swan Island, September 1909, by Jasper B. White and W. L. McAtee.—W. L. MCATEE, *Biological Survey, U. S. Dept. Agriculture, Washington, D. C.*

Notes from Central South Carolina.—Not many bird records seem to have come from the State of South Carolina for a number of years, save from the coastal region, with the bird life of which the name of Arthur T. Wayne is so closely linked. Since the fall of 1925, I have been living in Columbia, in the center of the State, and while here the following records have been of special interest to me.

Mr. Wayne, in his 'Birds of South Carolina,' says that it has been stated that the Ring-necked Duck is common in the State, but that he has been unable to verify the assertion. He records the taking of a single bird on January 11, 1886. A second specimen is recorded in a footnote as taken February 8, 1908. Both birds were taken on the Cooper River, near Charleston. On October 28, 1925, immediately after a storm, I saw a young drake Ring-neck in company with a Ruddy Duck and a Pied-billed Grebe on a small pond, known locally as "Horse Shoe Pond," about three miles west of Columbia. The flank feathers of the Ring-neck were still largely brown, and the black of the back seemed to have a rather brownish cast. The white bands of the bill were rather faint, especially the basal one. Apparently this species has not been recognized very often in South Carolina.

November 11, 1893, is given as the earliest record for the Pintail, though Wayne adds that the species doubtless arrives much earlier. On October 22, 1925, at "Lakeview," an artificial body of water a few miles northeast of Columbia, I watched a female of this species for half an hour—a great contrast—so lithe and trim—to five substantial little Wood Ducks that were a short distance up the pond. There were also five Coots feeding along in straggling fashion in the vicinity.

The Red-breasted Nuthatch apparently is not a regular visitor to South Carolina. I find Wayne has records for the years 1895, 1901, 1903,

and particularly 1906, all from the neighborhood of Charleston. Two other records are given, both from the interior of the State; the first by Mr. Leverett M. Loomis, who captured a single specimen February 24, 1877, in Chester Co., in the north central part of the State; and the second by my father, Dr. Ellison A. Smyth, Jr., who took a specimen October 4, 1886, in Clarendon Co., midway between Columbia and Charleston.

On October 10, 1925, and again on the 17th, I saw several specimens of *canadensis* in the pine woods at "Lakeview." On the first date there were several White-breasts present also. The contrast between the two species was quite marked. Subsequently *pusilla* was found in the same strip of woods, though not associated with the other species.—THOMAS SMYTH, *University of South Carolina, Columbia, S. C.*

Notes on the Nesting Birds of Northern Santa Fe County, N. M.—Since my notes under this title were published in 'The Auk,' July 1923, I have spent considerable time in the field and have succeeded in adding the following species to my list of summer birds of this section:

116. *Querquedula cyanoptera.* CINNAMON TEAL.—Two birds, male and female, were seen flying over the swamps along the Rio Grande near San Juan Pueblo, May 11, 1924.

117. *Archibuteo ferrugineus.* FERRUGINOUS ROUGH-LEG.—One or two birds seen on several occasions near La Bajada Hill during April and May, 1924, and again in May, 1925. In Arroyo Hondo, five miles southeast of Santa Fe, I have occasionally seen this Hawk.

118. *Buteo borealis krideri.* KRIDER'S HAWK.—A Red-tailed Hawk with a pure white underside was seen near Espanola, May 11, 1924. I watched the bird through my field-glasses for some time. I am familiar with Krider's Hawk in North Dakota and am convinced my identification is correct. The eggs of the Red-tail are here usually laid during the first half of April, and I believe this bird must have had a nest somewhere among the sandstone bluffs in the neighborhood.

119. *Selasphorus rufus.* RUFOUS HUMMINGBIRD.—Several seen in the Sangre de Cristo Mountains during spring and summer. About August 15, they leave the mountains and become common in the Piñon Flats.

120. *Tyrannus tyrannus.* KINGBIRD.—Not uncommon. I have frequently met with nesting Kingbirds in Pojaque, Cyamunge, Santa Cruz and San Juan Indian Pueblo.

121. *Loxia curvirostra stricklandi.* MEXICAN CROSSBILL.—My only record is from June 1, 1924, when I saw several birds in the Santa Fe Canyon. I was walking along the mountainside at an altitude of between 9,000 and 10,000 feet, when I heard a bird note quite unfamiliar to me. I followed up the sound and found a flock of eight birds, four males and four females. They were very tame, and I could approach to within a few feet of the flock. I watched the birds for several minutes until they flew away. A few minutes later they returned to the same place. Later, the same day, I saw three more birds higher up in the canyon.

122. *Penthestes atricapillus septentrionalis.* LONG-TAILED CHICADEE.—Only one record. A nest containing young was found in a Woodpecker hole in a quaking aspen in Santa Fe Canyon, June 12, 1924. Altitude 9,000 feet. I spent considerable time watching the parent birds feeding the young, and I am positive about the identification.

123. *Psaltriparus plumbeus.* LEAD-COLORED BUSH TIT.—Not uncommon in certain localities. I have several times seen small flocks of these little birds and also found some old nests. My first record of an occupied nest came May 24, 1924, when I found one containing six heavily incubated eggs. The nest was placed in the top of a Piñon Pine, ten feet up. June 6, 1924, I found another nest in the same locality. This was six feet up in a cedar and contained six young, which left the nest as I approached. Both nests were found near Arroyo Hondo, five or six miles southeast of Santa Fe.—J. K. JENSEN, *United States Indian School, Santa Fe, New Mexico.*

An Audubon Bill.—I recently obtained in an old book shop a bit of manuscript in the handwriting of John J. Audubon, being a bill to the Countess of Morton for certain parts of the 'Birds of America'. It is as follows:

"The Countess of Morton
to John J. Audubon.
for Nos. 3, 4, 5, 6 Birds of America £8. 8. 0
please pay this bill to Robt. Havell, Jnr.
Your Ladyship will much oblige her very respectfull
and obedient Serv't
John J. Audubon

Mr. Audubon hopes the above bill correct. If not the Countess of Morton will be so kind as to notify and pay accordingly—J. A.

95 Great Street
Bedford Square
April 15th, 1828"

—EDWARD G. KENT, *9 Highland Ave., Madison, N. J.*

RECENT LITERATURE.

Hellmayr's 'Catalogue of Birds of the Americas.' [1]—The fourth part of this invaluable work prepared by Dr. C. E. Hellmayr, appeared on December 29, 1925, and covers the difficult families Furnariidae and Dendrocolaptidae, comprising the Ovenbirds and Woodhewers. The treatment follows exactly that of the third part with the same abundance of foot notes covering original or amplified descriptions of critical species, discussions of relationships, etc., etc., while in the recognition of genera the author is commendably conservative.

Since noticing Part III the reviewer has had occasion to use it extensively and is more than ever impressed with the thoroughness and excellence of Dr. Hellmayr's work. Mr. Ridgway's 'Birds of North and Middle America' made intelligent systematic study of the Mesomyodian Passeres possible for those who are not specialists in the group, so far as the species north of Panama are concerned, but it was always exasperating to find only scattered mention of genera or species from farther south, although even that we were thankful for, as it was an extension of the task that Mr. Ridgway had set himself. Now, however, Dr. Hellmayr has continued the work from Panama to Cape Horn, and we have an exhaustive up-to-date treatment of these difficult families in their entirety.

Four new genera appear in the present volume: *Limnoctites* (p. 54) for *Limnornis rectirostris* Gould; *Dendrophylax* (p. 70) for *Synallaxis setaria* (Temm.); *Oreophylax* (p. 74) for *S. moreirae* and *Xenoctistes* (p. 188) a new name for *Syndactyla* Reichenbach, preoccupied; and nine subspecies of the genera *Chilia*, *Leptasthenura*, *Asthenes*, *Phacellodomus*, *Xiphocolaptes* and *Dendroplex*.

We wish Dr. Hellmayr all speed with his work and congratulate ourselves that his first volumes covered families so vitally in need of revision and concerning which he is probably better informed than any other ornithologist.—W. S.

Dwight's 'Gulls of the World.'—Dr. Jonathan Dwight has been engaged for some years past in an exhaustive study of the Gulls of the world with especial reference to their plumages and molts and the results of his researches are presented in a recent bulletin[2] of some 300 pages issued by the American Museum of Natural History.

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[1] Catalogue of Birds of the Americas. Initiated by Charles B. Cory, Late Curator of Zoology. Continued by Charles E. Hellmayr, Associate Curator of Birds. Part IV, Furnariidae—Dendrocolaptidae. Wilfred H. Osgood, Curator, Department of Zoology, Editor. Field Museum of Natural History Chicago, U. S. A. December 29, 1925, pp. 1–390 with one colored plate.

[2] The Gulls (Laridae) of the World; Their Plumages, Moults, Variations, Relationships and Distribution. By Jonathan Dwight, M.D. Bull. Amer. Mus. Nat. History. Vol. LII, Art. III, pp. 63–401, New York. December 31, 1925. [The distribution of the author's separates of this bulletin has been delayed pending the preparation of an index.]

Probably no such series of detailed plumage descriptions has ever before been prepared for a single group of birds, and to one who glances casually through the pages it is fairly bewildering in its minutiae and complexity. At the same time one is deeply impressed if not appalled at the vast amount of work that the preparation of the report has entailed and the endless series of specimens which it has been necessary to examine and compare. The study of Gulls is by no means child's play and to make proper use of such a work as this, one must have some experience with the group—must be something of a "Laridist" as Dr. Coues has termed the Gull expert. With a series of specimens of any of the species before one it is now possible to match them up with the careful descriptions here given and ascertain to a nicety just "who's who" in Gulls. Without specimens, however, it is a difficult matter to compare the long descriptions, and while there are some useful keys one longs for a more definite contrasting of the important characters, even though the admirable plates of wing and tail patterns serve this need to some purpose. Doubtless, however, study will show that individual variation is so great that such tables of contrasting characters are impossible. Indeed, we infer as much, when we find that the key to the species of *Rissa* includes the subspecies also, while those for *Larus* and *Hydrocoloeus* do not. Indeed with only casual mention of some of the differences in certain of the plumages, it is difficult to ascertain just what such a form as *Larus argentatus thayeri*, for instance, really is, and on what characters it is based.

The introductory pages explain the two, three and four year plumage cycles which are exhibited by the various species, and the several plumages and intervening molts are ingeniously plotted in concentric circles or spirals. Variation in bill, leg, foot and tail are discussed at length, as well as color variation both of plumage and of the soft parts, the latter gleaned from the field notes of many collectors. Then follows the detailed description of the various plumages of each species, which in the Herring Gull number no less than ten—the natal and juvenal, and the nuptial and winter plumages of the first, second, third and fourth year, after which the annual plumages are not distinguishable. It requires ten pages to cover these Herring Gull descriptions with four more for the summary. Under each plumage are quoted the number and location of several "reference specimens" which when consulted will show just exactly what the author is describing, if there should be any question as to the accuracy of his deductions.

The series of 386 drawings of tail and wing patterns of most of the plumages of nearly all of the species, constitutes one of the most valuable features of the work as it is always easier to grasp an idea from a drawing or diagram than from a lengthy description, necessary as the latter may be. There are also colored plates showing the head and foot of at least two plumages of each species, and outline drawings of the bills of all the species. Mr. Allan Brooks is responsible for the colored plates while the black and white illustrations are mainly from sketches by Mr. H. Ira Hartshorn.

The paragraphs on distribution are full and detailed and there are tables of measurements for each species.

Dr. Dwight's knowledge of the plumages and molts of birds is exhaustive and his more important contributions to ornithology have all been in this field, but in the present work we feel that he has outdone himself and has surpassed in detail and accuracy any of his former studies.

In matters of classification and nomenclature, his treatment of the group has not, perhaps, been quite so happy. While it is convenient, for instance, to have an alphabetical list of the species names and those of the genera, with their equivalents indicated according to the author's views, it would have been far more satisfactory, in the case of the genera, to have had the type species indicated in every case. Thus while "*Chroicocephalus* = *Hydrocoloeus*" in the sense that they both belong to the same generic group in the present work, they are by no means *equivalent* and each is available for generic use if we cut our genera finer, yet nowhere in the work can we ascertain what the type species of *Chroicocephalus* is, or just what species it should be associated with.

Again, in the matter of the recognition of genera, while Dr. Dwight conforms to the current attitude as to most genera, he attempts to divide the species of the great genus *Larus* into *Larus* and *Hydrocoloeus* without being able to present clearly defined characters for their separation. As a matter of fact, as it appears to the reviewer, there are a number of subgenera of *Larus*, which Dr. Dwight recognizes, but these must all be left as subgenera or all elevated to generic rank, and nothing is gained by attempting to divide the lot into two grand divisions where no clear line of demarkation exists. Such an attempt smacks more of a *genus de convenance*—a desire to reduce the number of species in *Larus* rather than the discovery of a natural distinction, and the necessity of calling so many species by a generic name with which they have never before been associated does not advance science.

We note a few evident slips apparently due to changing names while the work was going through the press. *Chroicocephalus* is thus retained on pp. 111 and 394 where we presume *Hydrocoloeus* is intended, and under Franklin's Gull a type locality is quoted under *franklinii* but none under *pipixcan*, the name adopted. However, slips are inevitable in a work of such scope and, as the author truly says, nomenclature is largely a matter of personal opinion so that we can afford to pass over such trivial matters and congratulate Dr. Dwight upon a splendid piece of ornithological work which places him at once in the enviable position of high priest of the "Laridists."—W. S.

Wright and Dewar on 'The Ducks of India.'—The present work,[1] we

[1] **The Ducks of India: Their Habits, Breeding Grounds and Migrations; together with other Useful Information for the Sportsman and Observer. By R. G. Wright & Douglas Dewar. With Twenty-two Full-page Plates in Colours. H. F. and G. Witherby, 326 High Holborn, London, W. C. 1., 1925, pp. 1–2311. £ 3/3/net.**

are told in the preface, was undertaken to present better colored plates of the Indian Ducks than those "now before the public," and in the opinion of Mr. Dewar the plates made from Mr. Wright's paintings are superior to any on the subject which have yet appeared. In this view we can hardly concur, as we consider Grönvold's plates in Stuart Baker's 'Indian Ducks and Their Allies' much more satisfactory for purposes of identification. The delicate landscapes of Mr. Wright's plates, almost Japanese in their effect, and their impressionistic character, doubtless appeal to the artist, but the blotches of color and the lack of detailed drawing in many of the birds make the figures unsatisfactory for the purposes of the ornithologist. We might add that the plates in neither of the works mentioned compare with those of some of the same species recently produced by Thorborn and Fuertes.

The text by Mr. Dewar is intended for the sportsman and contains full descriptions of plumage and distribution with accounts of the habits and food of each species, the latter largely taken from the works of Hume and Stuart Baker to whom credit is given. The up-to-date nomenclature of Stuart Baker's work is wisely adopted while the names occurring in the older books are given as synonyms, with a good list of English and Indian vernacular names. Preliminary chapters deal with 'The Distinguishing Features of Ducks,' 'Duck-shooting in India'; 'Ducks in Kashmire' by R. G. Wright; 'Migration'; 'The Breeding Grounds of Migratory Ducks'; 'The Eclipse Plumage of Drakes'; 'The Economic Importance of the Ducks of India'; 'Snaring Ducks'; and 'The Value of Shooting Records.' Curiously enough while the usual form "ducks" is used in three of these chapters, in the others the less common plural form "duck" is used.

The book is beautifully printed on extra heavy paper and the delicate plates most carefully reproduced, so that it forms an extremely attractive volume and one which will undoubtedly prove popular with sportsmen. —W. S.

Simmons' 'Birds of the Austin Region.'—This excellent work[1] is far more than a local list. Under each species are arranged paragraphs dealing with general geographic distribution, habitat, local haunts, general habits, feeding habits, flight, voice, migration, breeding, nest location, nest construction, eggs, description, field marks, popular names and remarks, while a preface briefly reviews the physical features and location of the "Austin Region," its soil formation, weather conditions, early history, etc., and also explains the author's sources of information, how birds are classified, how birds are named, and "who's who" in Texan ornithology. Instead of quoting each author's name in outlining the distribution and recording of the various species, each one is given a letter,

[1] Birds of the Austin Region, By George Finlay Simmons, M.A., Instructor in Zoology in the University of Texas. Published by the University of Texas, Austin. University of Texas Press. 1925, pp. i–xlii + 1–387.

and a series of letters in each case shows who have observed the species in their respective localities.

The work seems to be accurately compiled and certainly furnishes the local student with a wealth of information. The area of Texas is so great that no State bird book has yet been issued and it is a question whether local treatments of the subject, such as the present volume, will not serve the purpose better. Several of these, notably for the Rio Grande Valley Region, have appeared but nothing on the scale of Mr. Simmons' book, so that we welcome it as our most extensive work on Texan ornithology.

While it is stated that the nomenclature follows that of the A. O. U. 'Check-List' with the addition of certain forms, it is noticeable that a number of changes in nomenclature which have appeared in the list of "proposed changes" but which have never been adopted by the A. O. U. Committee are included. This is unfortunate as is also, to our mind, the ommission of the word "Texas" from the title, as the work will be listed far beyond the area in which the location of Austin is known.

Many suitable illustrations have been loaned by the publishers of standard works and there are original half-tone portraits of local ornithologists. Among these is the late Prof. Thomas H. Montgomery, Jr. whose fame in the broader fields of zoological research almost entirely obliterated his early work on birds. In 1891, when a freshman at the University of Pennsylvania, he was an active member of the Delaware Valley Ornithological Club and bade fair to develop into one of our leading ornithologists, but other interests took all of his time in succeeding years, although at Woods Hole and at the University of Texas he again took a lively interest in teaching ornithology and in field studies, and it is thus fitting that his name should be permanently associated with the first field of science in which he was interested.

We congratulate Mr. Simmons on an excellent piece of work which will, we are sure, develop many an ornithologist in the Austin Region in the future.—W. S.

Spitzbergen Papers.—This volume[1] contains the results of the first Oxford University Expedition to Spitsbergen in 1921. Like many other University publications it consists of separates from various journals bound up together with an explanatory preface. The expedition consisting of eighteen members under the leadership of Rev. F. C. R. Jourdain included six ornithologists and a taxidermist, and, as might be supposed, its primary interest was the study of birds. Explorations in other fields were carried on, however, and papers dealing with topography, geology, ecology, botany and invertebrate zoology were published and are here presented.

Besides the results of its immediate work the expedition stimulated the making of other trips to this interesting and easily accessible portion of the

[1] Spitsbergen Papers, Volume I. Scientific Results of the First Oxford University Expedition to Spitsbergen (1921). Oxford University Press, London. Humphrey Milford. 1925. Price $10.00.

Arctic and expeditions were made in 1922, '23 and '24 to continue the scientific work.

The papers in the present collection which deal with ornithology are on the 'Courtship of the Red-throated Diver' by J. S. Huxley, 'Habits of the Red-throated Diver in Spitsbergen' by G. J. van Oordt and J. S. Huxley, 'Breeding Habits of the Glaucous Gull' by A. H. Paget Wilkes, 'Birds of Spitsbergen' by F. C. R. Jourdain, and on the 'Breeding Habits of the Turnstone' by Paget Wilkes and 'Breeding Habits of the Barnacle Goose' by Jourdain, most of which have already been mentioned in these columns.

The volume in all makes a valuable contribution to our knowledge of the natural history of this interesting island.—W. S.

Kirke Swann's 'Monograph of the Birds of Prey.'—Part V of this handsome work[1] completes the genus *Accipiter*, most of the species of which, following the English usage are termed "Sparrow Hawks" although our American species retain their familiar names of Sharp-shinned and Cooper's Hawks. The Buteoninae are also begun, the genera *Erythriotriorchis*, *Megatriorchis*, *Heterospizias*, and *Geranoaetes* being covered as well as some of the typical Buteos.

Gundlach's Hawk, *Accipiter gudlachii*, a Cuban representative of *A. cooperi*, is regarded as a distinct species which is apparently extinct, since no specimens have been taken for many years. Under the name *Accipiter velox pacificus* the western Sharp-shinned Hawk is recognized, although long since rejected by the A. O. U. Committee.

The four plates represent races of *Buteo ferox*, *vulpius* and *buteo;* and phases and ages of *B. polyosoma*, while two are reproductions of photographs of the nesting site of *B. buteo* in Spain and a nest of Sennett's White-tailed Hawk in Texas.—W. S.

La Touche's Handbook of Birds of Eastern China.—Part II of this most welcome work[2] covers the Dippers, Thrushes, Flycatchers and Shrikes. The plan of the work has already been fully described and the present part maintains the high standard of its predecessor. *Cinclus pallasii wilderi* (p. 98) Chihli, and *Hemichelidon sibirica incerta* (p. 159) Lower Yangtse, are described as new but unfortunately the type specimen and a definite type locality are not indicated.

To us in America the presence of twelve forms of Robin and twelve Shrikes seems a bewildering abundance, so different is the make-up of the bird fauna of China and North America. Short keys to the species of the larger genera would seem to be desirable and would aid the student very

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[1] A Monograph of the Birds of Prey (Order Accipitres). By H. Kirke Swann, London, Wheldon & Wesley, Ltd. 2, 3, & 4, Arthur Street, New Oxford Street, W. C. 2, pp. 277–364; pll. five. Part V, January 25, 1926. Price 26 s. net.

[2] A Handbook of the Birds of Eastern China. By J. D. D.La Touche, Part II. Taylor and Francis, Red Lion Court, Fleet Street, London, E. C. 4. December, 1925. Price 7s. 6d., net.

materially. The plates in this part represent captive "Ruby-throats"—Thrushes not Hummingbirds, a nest in situ of *Terpsiphone incei* and photographs of the Shanhaiknan River.—W. S.

Lynes on the Ornithology of Sous Territory, South Marocco. This important paper[1] describes a trip during May and June to the Sous Territory of Marocco, south of the Great Atlas, a region of which nothing was known zoologically, owing to the former hostility of the Berber natives. After an account of his itinerary and the physical characteristics of the country, the author groups the birds and plants ecologically in ten "type habitats," following which is a well annotated catalogue of the birds with the description of one new form, *Turdoides (Crateropus) fulvus maroccanus* (p. 49) Taroudant. Admiral Lynes concludes from his studies of the fauna and flora that the region is closely allied zoogeographically, to South Marocco, north of the Great Atlas, and probably quite different from the country lying south of the Little Atlas, which had yet to be explored. He adds two species to the fauna of Marocco *Oenanthe moesta* and *Pterocles senegallus* and thinks that the local races of *Hirundo rustica* and *Motacilla flava* will eventually prove separable.

A colored map accompanies the report and a number of reproductions of photographs illustrating the character of the country.—W. S.

Levauden et al. on the Ornithology of Tunisia.—This short paper[2] is a supplement to J. I. S. Whitaker's 'Birds of Tunisia,' 1905, and consists of numerous comments and additions to that work. These are run together in paragraphs under family headings so that the matter is not so conveniently accessible as if each species stood out alone.

There is a half-tone plate of the Vulture, *Torgos tracheliotus nubicus*. —W. S.

'Aves' for 1924.[3]—We have so frequently had occasion to praise Mr. W. L. Sclater's painstaking labors in preparing the 'Aves' for the 'Zoological Record,' the usefulness of this work, and the unselfishness of the Zoological Society of London in maintaining its publication, that there is little left to say on the matter except to announce the appearance of the volume for 1924 with the 'Aves' section as full and satisfactory as ever, comprising no less than 988 titles.

Inasmuch as it is humanly impossible to avoid making some errors in a compilation of this magnitude we would correct a small one, not in a spirit of criticism but for the sake of accuracy, i.e., the listing of one author, Bradshaw H. Swales, as "H. S. Bradshaw."

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[1] Ornithology of the Sous Territory of Southern Marocco. By Rear-Admiral Hubert Lynes. Mémoires de la Société des Sciences Naturelles du Maroc. No. XIII, Part 1, October 30, 1925. Pp. 1–82.

[2] Contributions a l'Ornithologie Tunisienne pour servir de complément et de supplément aux Birds of Tunisia, de J. I. S. Whitaker (1905) par L. Levauden, A. Blanchet et P. Bédé. Bull. de la Direction Générale de l'Agriculture, du Commerce et de la Colonisation, Tunis, 1924, pp. 1–26.

[3] Aves. Zool. Record LXI, 1924. By W. L. Sclater, pp. 1–75. Price 7/6. November, 1925. (Zool. Soc. London, Regent's Park, London, N. W. 8.)

We trust that our American ornithologists will support this publication by purchasing a copy and so help to keep up a work indispensable to the systematic investigator as well as to possess a complete list of the ornithological publications of the world for the year, 1924.—W. S.

Mathews' 'The Birds of Australia.'—Part 5 of Volume XII of his great work[1] contains the Weaver-Finches of the genera *Steganopleura, Donacola, Chloromunia, Heteromunia, Aidemosyne* and *Aegintha.* The plates are more than usually attractive and are among the best that Grönvold has done.

There are still a few species of this family to consider as well as the Orioles, Crows, Bowerbirds, etc., about thirty in all, so that Mr. Mathews should be able to finish his task in four or five more numbers.—W. S.

Van Oordt and Verwey's 'Catalogue of the Birds of the Netherlands.'—This list[2] is of interest in view of the preparation of a new edition of the A. O. U. 'Check-List' but unfortunately there seems to be but little original attention given to the nomenclature which for the most part is that of the 'Hand-list of British Birds' by Hartert et al., although *Colymbus* is used for the Loons as it should be. No attempt is made to present binomial as well as trinomial names in cases where several subspecies are listed, and, after all, perhaps this is the best solution of a difficult problem. Subspecies and species appear in the same sized type and are numbered consecutively from 1 to 349, the idea evidently being that the catalogue is a list of all the "kinds of birds" found in the Netherlands and that the trinomial indicates the subspecific character without the interpolation of a "specific" group name which is constantly misinterpreted.—W. S.

Chapman on New Birds from Ecuador and Peru.—This paper[3] styled by its author "one more concluding" paper of the series dealing with the Ecuadorian collections of the American Museum of Natural History and related material, contains descriptions of a new genus *Tumbezia* (p. 1) for *Ochthoeca salvini* Tacz. and new subspecies of the genera *Falco, Ara, Dysithamnus, Grallaricula, Synallaxis, Myrmotherula* and *Pheugopedius.* —W. S.

Lord Rothschild on a Collection from N. W. Yunnan.—This report[4]

[1] The Birds of Australia. By Gregory M. Mathews. Vol. XII, Part 5. November 23, 1925, pp. 185–224.

[2] Voorkomen en Trek der in Nederland in het Wild Waargenomen Vogelsoorten door Dr. G. J. Van Oordt en Jan Verwey. Uitgegeven door de Nederlandsche Ornithologische Vereeniging. N. V. Boekhandel en Drukkerij voorheen E. J. Brill. Leiden. 1925, pp. 1–96.

[3] Descriptions of One New Genus and of Species of Birds from Peru and Ecuador. By Frank M. Chapman. Amer. Mus. Novit. No. 205. December 28, 1925, pp. 1–11.

[4] On a Fourth Collection of Birds made by Mr. George Forrest in Northwestern Yunnan. By Lord Rothschild. Novitates Zoologicae XXXII, pp. 293–313. December, 1925.

is based upon a fourth collection made by George Forrest and including 179 species, many of which were not contained in his previous collections from the same country. All of the specimens of each species are listed with frequent brief annotations, and two forms are described as new, *Streptopelia chinensis forresti* (p. 293) and *Pnoepyga squamata magnirostris* (p. 297). —W. S.

Hartert on the Types in the Tring Museum.—In his sixth installment[1] of the Catalogue of Types of birds in the general collection of the Tring Museum, Dr. Hartert covers the Owls, Hawks, Herons, Anseres and Steganopodes. Incidentally it is pointed out that in the type of *Phaethon lepturus dorothaea* Mathews, the only "Yellow-billed" Tropic Bird with a red bill, as figured in the 'Birds of Australia,' has in reality a yellow bill which has been painted red.—W. S.

Bangs and Penard on the Henry Bryant Types of Birds.—Dr. Henry Bryant, an active ornithologist in the sixties and a member of the Boston Society of Natural History who described and collected many West Indian birds and died while on an expedition to Porto Rico in 1867, named in all six genera and 28 new species and subspecies, and most of his type specimens, with the rest of his collection came eventually to the Museum of Comparative Zoology. Messrs. Bangs and Penard have in this paper[2] given a list of the Bryant types and their present location, some few having been given to other institutions by the collector's widow. There is also a bibliography of Dr. Bryant's ornithological writings and a list of all of the new forms described by him.—W. S.

Recent Papers by Peters.—Mr. James L. Peters describes[3] two new species of birds from a collection made in Argentina by J. Morgensen and presented to the Museum of Comparative Zoology by Dr. Thomas Barbour. These are *Ceophloeus erythrops fulcitus* (p. 195) Chaco, and *Piaya cayana morgenseni* (195) Tucuman.

In another paper[4] he described *Holoquiscalus lugubris contrusus* (p. 175) from St. Vincent, 1700 ft. elevation in the mountains. It seems that there are two forms of Grackle in this island, the second belonging to the other West Indian species—i. e., *Q. fortirostris dispar* Clark. Incidentally, Mr. Peters examined the types of Cassin's *Q. mexicanus* and *Q. rectirostris* in the Philadelphia Academy collection, which have always been perplexing to students of the West Indian *Quiscali*. The former which, as is obvious

[1] Types of Birds in the Tring Museum. By Ernst Hartert, Ph.D. B. Types in the General Collection. VI. Novitates. Zool. XXXII, pp. 259–276. December, 1925.

[2] The Henry Bryant Types of Birds. By Outram Bangs and Thomas E. Penard. Bull. Mus. Comp. Zool., LXVII, No. 3, pp. 197–207. June, 1925.

[3] Two New Birds from Argentina. By James L. Peters. Occas. Papers Boston Soc. Nat. Hist., Vol. 5, pp. 195–196. January 30, 1926.

[4] A New Grackle from St. Vincent, Lesser Antilles. By James L. Peters. Ibid., Vol. 5, pp. 175–176. December 18, 1925.

from our present knowledge, never came from Mexico, he regards as identical with the Guadeloupe bird where Ridgway placed it, while the latter he considers, and we think rightly, to be an individual with an abnormal bill probably of *Q. lugubris*.—W. S.

Iredale on George Forster's Bird Paintings.—This is an interesting account[1] of the paintings of birds made on the first and second voyages of Capt. Cook, those of the latter voyage being by George Forster, son of J. Reinhold Forster, naturalist of the expedition, both of whom accompanied Cook on this occasion.

These paintings form the basis of certain species of the older writers and are preserved in the Banksian Library in the British Museum, Banks having been naturalist on the first voyage.

Recently a partial set of duplicate drawings, including also a few not in the British Museum set, has been identified in the Australian Museum. There are 53 of these and Mr. Tom Iredale, who is thoroughly familiar with the original set, here presents a list of them with identifications of the birds and the corresponding numbers of the London set.—W. S.

Recent Papers by Domaniewski.—M. Janusz Domaniewski has recently published a review[2] of the species and subspecies of the genus *Thamnophilus* with systematic comments and the descriptions of two new forms: *T. tenuipunctatus chrostowski* (p. 761) Mapoto, Ecuador and *T. ruficapillus jaczewskii* (p. 762) Cutervo, Peru.

In another paper[3] he presents a systematic and geographic review of the genus *Budytes*. In this connection he discusses the nomenclature of ornithology, entomology and botany in relation to the naming of forms below the species and proposes five classes, the subspecies, natio, prospecies, morpha and aberratio, and refers the described forms to these several categories, describing *B. feldegg suschkini* as an "aberratio nova." It is difficult to see what we gain by such complications in a scheme of nomenclature already trying enough.

A third paper[4] deals with palaearctic Woodpeckers and two new forms are proposed, *Picus canus dzieduszyckii* (p. 75) South Poland and *Dryobates major rossicus* (p. 81) Saratoff. No less than 26 subspecies of *D. major* are listed.—W. S.

Stresemann on Callocalia and Otus.—This paper[1] forms one of the

[1] George Forster's Paintings. By Tom Iredale. Australian Zoologist. IV, pp. 48–53. November 10, 1925.

[2] Beitrag zur Kenntnis der Gattung Thamnophilus Vieillot. von Janusz Domaniewski. Bull. Acad. Polonaise des Sci. et des Lettres. 1924, pp. 753–763. Cracovie, 1925.

[3] Systematik und geographische Verbreitung der Gattung Budytes von Janusz Domaniewski. Ann. Zool. Mus. Polonici Hist. Nat. 1925, Warszawa. pp. 85–125.

[4] Contribution a la connaissance des pics paléarctiques. A Janusz Domaniewski. Ibid. 1925. pp. 75–84.

[1] Beitrage zur Ornithologie der indo-australischen Region. Von E. Stresemann. Mitteil. Zool. Mus. in Berlin. 12. Bd. 1. H. October, 1925. pp. 179–195.

author's "Contributions to the Ornithology of the Indo-australian Region." The first part is a revision of the Edible-nest Swiftlets, *Callocalia*, a group which Oberholser and Stresemann have both studied extensively.

The latter now recognizes five species, *C. francica* (20 subspecies), *fusiphaga* (10 subspecies), *gigas*, *troglodytes* and *esculenta* (15 subspecies). A table shows the distribution of the forms of the group in the various Malay islands in which they occur. *C. esculenta sumbawae* (p. 189) is described as new from Tambora and *C. e. minuta* (p. 189) from Kalao.

The second part of Dr. Stresemann's paper is devoted to a consideration of the Indo-Malay Screech Owls (*Otus*), of which he recognizes *O. sagittatus, rufescens, spilocephalus* (6 subspecies), *alfredi, brookei* (3 subspecies), *sylvicola, whiteheadi, bakkamoena* (3 subspecies in this region and 7 elsewhere) and *scops* (with 24 subspecies in all).

Dr. Stresemann has another paper[1] on 'Color Mutation in Nondomesticated Birds' in which he discusses such cases as the Blue and Snow Geese, Blue and White phases of Herons, the white Australian Goshawk, etc.—W. S.

Relation of Palaearctic Birds to the More Important Forest Insect Pests.—Written from the forester's standpoint, and with rather formal ecological arrangement and terminology, this paper,[2] is a resumé of the role of birds as enemies of the nun moth, bark beetles, and May beetles in German forests. The most valuable original contribution of the paper consists of the numerous analyses of contents of the stomachs of numerous species of European woodland birds. The general conclusions of the author, if we may so term certain excerpts from his introductory chapter, are: "Biological warfare upon pests is waged by parasites in the first line. Most important in the second line are the higher animals among which the birds play a leading role. . . . Only exceptionally can birds make effective warfare upon a calamitous insect outbreak. Birds are the police, not the army of the forest" (p. 2).—W. L. M.

The Lone Swallows.[3] Under this title Mr. Henry Williamson, author of 'Sun Brothers' puts forth another series of nature stories dealing with the south of England. In his preface he quotes some "literary authorities" who refer to nature writing as "a minor thing" and who much to his horror express the opinion that Richard Jefferies is like grass, "a little is enough." Fortunately however he was not discouraged by them from following his chosen field and has given us some of the most charming bits of literature that nature writers have produced.

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[1] Uber Farbungsmutationen bei nichtdomestizierten Vogeln. E. Stresemann Verhl. Deutsch Zool. Gesellschaft auf der 30 Jahresversamm zu Jena, June 2–4, 1925.

[2] A. Frhr. von Vietinghoff von Riesch, Zeitschr. f. angew. Ent., 10, H. 1, April 1924, pp. 1–55, and H. 2, October 1924, pp. 327–352.

[3] The Lone Swallows and Other Essays of the Country Green. By Henry Williamson, author of "Sun Brothers." New York, E. P. Dutton & Co., 681 Fifth Ave. Pp. 1–227. Price $2.50.

In setting forth the problems of life as he sees them, he draws upon all branches of nature and upon man as well, nor does he hesitate to touch upon the sadder side of existence treating of death as well as of life.

Everyone who wanders afield, his mind full of the joy of living and the mystery of life, will read Mr. Williamson's little book with intense interest.

While many subjects are touched upon, there is more of birds than anything else, and in each species he goes below mere form and habit to interpret character and the part it plays in the great structure of nature.—W. S.

Brooks' 'Hand Book of the Outdoors.' Here is a book[1] for the Boy Scout, camper, and the lover of the woods and streams, who would get all possible return from his outings. Part I—Outdoor Activities—tells of pathfinding, hiking, mountain climbing, water sports, etc. Part II—Woodcraft—takes up the study of birds, flowers and aquatic life, ecology, the laws of nature and the biology of leadership. Part III—Campcraft—tells of camps and their equipment, food and its cooking.

The bird information outlines distribution, migration, nesting and the bird's place in nature.

As we glance through the pages of this attractively gotten up book we are impressed with the amount of information contained and its admirable systematic arrangement. It seems to be just the book for the camper, traveler and hiker, giving him the information he desires in concise form and at the same time teaching the proper attitude toward nature and toward our companions in the field, the latter of no small importance in the intimacies of camp life.

Mr. Brooks' book is no mere compilation but a carefully prepared treatise by one who knows what he is talking about, and who from long experience knows human nature as well as wild nature.—W. S.

Correction. In noticing Mr. Kirke Swann's 'Two Ornithologists on the Lower Danube' in the January 'Auk' p. 113, the price was wrongly given as 26 shillings. It should have been 5 shillings net.

The Ornithological Journals.

Bird-Lore.—XXVIII, No. 1. January–February, 1926.

Who Would Have Thought it of Bubo? By H. M. Holland—A captive Great Horned Owl which lays each year two eggs which are removed and hen's eggs substituted. The young chickens are reared by the Owl although suitable feed is given them. The bird is now seventeen years old and began to lay when seven years of age.

Mutual Enemies—The Crow and the Owl. By Henry R. Carey.

The Migration of North American Birds covers the Swifts while the

[1] A Handbook of the Outdoors. By Earl Amos Brooks, Instructor in Field Laboratory Sciences, School of Religious Education and Social Service, Boston University. New York, George H. Doan Company. (1925), pp. 1–238.

Educational Leaflet, by Harry S. Swarth, treats of Audubon's Warbler. The bulk of the number is devoted to the Christmas Censuses while Dr. A. A. Allen has an illuminating article on the Balance of Nature in the Audubon Society Department, which every conservationist should read.

The Condor. XXVIII, No. 1. January–February, 1926.

Lessons in Aviculture from English Aviaries. By Casey A. Wood.—An interesting and instructive article with sixteen illustrations.

A Report on the Birds of N. W. Alaska and Regions adjacent to Bering Strait (cont'd). By Alfred M. Bailey.

The Evidence as to the Breeding of the Rhinoceras Auklet in California. By Joseph Grinnell.

The Wilson Bulletin. XXXVII, No. 4. December, 1925.

Notes on the Nesting of the Goshawk in Pennsylvania. By G. M. Sutton. The author has failed to look up the literature on the subject or he would have found other records of the breeding of this species in the State. To Messrs. Otto and Herman Behr of Lopez, Sullivan Co., seems to belong the credit for first definitely recording its nesting in Pennsylvania (Warren's 'Bird of Penna.,' and 'Auk,' 1897, 317.)

Observations of Shorebirds in Central Oklahoma in 1924. By M. M. Nice.

The Whip-poor-will. Its Prospects of Survival in Southern Iowa. By E. D. Naumann.

Notes on the Shorebirds of Central Iowa. By W. W. Rosen.

Summer Birds at Huron Mountain, Michigan. By B. H. Christy.

The Oölogist. XLII, No. 11. November, 1925.

The Common Names of Birds. By H. O. Green.—Pleads that in a group like the Song Sparrows the eastern race should have a distinctive name like the others, instead of simply "Song Sparrow." In this we agree, but not in making all English names on the trinomial system. The Boat-tailed and Great-tailed Grackles, for example, are subspecies of the same form but it would be absurd to call the latter the "Great-tailed Boat-tailed Grackle" and still worse to change the name altogether. We now have more common names for each bird than we have scientific—70 for the Ruddy Duck for instance—although it is against the technical names that most of the criticism is directed, and we should not add to the number.

Note on the Food of the Broad-winged Hawk. By L. A. Luttringer.

The Oölogist. December, 1925. XLII, No. 12.

Pennsylvania and New Jersey Nesting Dates for 1925. By R. F. Miller.

Eggs of the Elegant Tern. By C. L. Field.

The Oölogist. XLIII, No. 1. January, 1926.

Numerous notes and articles on the Great Horned Owl.

Spring and Summer Birds of Harrison Co., Kentucky. By L. O. Pindar.—132 species very briefly annotated.

Cassinia. XXV, 1922–24. (February 1926).

Biographical sketches with portraits of George Spencer Morris and Isaac Norris DeHaven, by Witmer Stone.

A Season's Study of Some of Our Water Birds. By Julian K. Potter.

Tables of Migration and Notable records for 1922 to 1924 in Eastern Pennsylvania and New Jersey and Proceedings of the Delaware Valley Ornithological Club.

The Cardinal. No. 7. January, 1926.

The Relations of Birds and Man. By R. Boulton.

Bobwhite in Pennsylvania. By B. H. Christy.—An interesting and instructive article on the varying abundance of the species and the introduction of alien birds.

Gray-cheeked Thrush. By Norman McClintock.—Singing on migration.

Bulletin of the Northeastern Bird-Banding Association. II, No. 1. January, 1926.

The Banding of Common Murres. By H. F. Lewis.

The Fourth Banding Expedition to the Sandy Neck Night Heron Colony. By C. B. Floyd.

Notes on the Mating of Song Sparrows and their Range Limits during the Nesting Period. By Mrs. L. C. Hamill.

A New Host for the Blood-sucking Fly. *Protocalliphora splendida.* By Harry E. Woods.—On Barn Swallows.

The Ibis. (XII series) II, No. 1. January, 1926.

Studies on the Courtship and Sexual Life of Birds. VI. The Black-tailed Godwit (*Limosa limosa*). By Julian Huxley and F. A. Montague.

Field Notes on a Collection of Birds from Uganda. By H. F. Stoneham. —Annotated list of 175 species (to be continued). *Mesopicus goertae eremiae* proposed as new (p. 90) from Bomba, Uganda and *M. g. acholiorum* (p. 90), Padea, Uganda.

A Collection of Birds from the Fiji Islands. Part III. By Casey A. Wood and Alexander Wetmore.

Further Notes from Spitsbergen. By F. A. Montague.

More Notes on the Quadrate as a Factor in Avian Classification. By P. R. Lowe.—On the basis of this character the author finds the Kagu of Gruine affinities, though on the line of descent from a Rail-like ancestor, while the Sun Bittern is rather more Ralline, the two are, however, evidently related and the resemblance in coloration of their primaries is extraordinary, furnishing another instance of the value of color pattern as a phylogenetic character (cf. Stone, Jour. Acad. Nat. Sci., XXV, 1912.)

Bulletin of the British Ornithological Club. CCC. December 2, 1925.

The chairman, Mr. Witherby presents his annual review of ornithology for the year 1925.

Lord Rothschild describes a new Cassowary from N. E. New Guinea, *Casuarius c. lateralis* (p. 30).

Dr. Hartert states that the alleged *Aquila rapax culleni* from Dabrogea is, in his opinion, *A. nipalensis orientalis* but Mr. Swann failed to agree. Dr. Lowe discussed the genera of South American Rails.

Bulletin of the British Ornithologists' Club. CCCI. December 29, 1925.

P. F. Runyard compares the eggs of *Charadrius semipalmatus* and *hiaticula*.

Dr. Hartert discusses *Oenanthe oe. seebohmi*.

W. L. Sclater describes *Cryptospiza salvadorii ruenzori* (p. 45).

Count N. Guildenstolpe discusses the types in the Royal Natural History Museum at Stockholm in connection with *Phylloscopus trochiloides* and *Sylvia conspicillata bella*.

Bulletin of the British Ornithologists' Club. CCCII. January 30, 1926.

Rothschild and Hartert describe *Sassius simplex* (p. 51) from a specimen in the Vienna Museum from the Hawaiian Islands which has mounted for 120 years. It is unlike anything known and is obviously now extinct. They also describe an Accipiter and a Turdus from New Britain.

A. L. Butler describes *Topaza pella microrhyncha* (p. 56) from Para, and Kloss and Chasen, new forms of *Cyanops* and *Tephrodornis* from the Malay region.

C. B. Ticehurst has a new *Phylloscopus* from the Himalayas and G. M. Mathews proposes a number of new names for Australian and Polynesian birds.

British Birds. XIX, No. 7. December, 1925.

The Courtship of the Teal. By Henry Boase.

Recovery of Marked Birds.

British Birds. XIX, No. 8. January, 1926.

An Historical Review of the Laws, Orders and Customs Anciently Used for Preservation of Swans in England. By N. F. Ticehurst.

Obituary of M. J. Nichol.

British Birds. XIX, No. 9. February, 1926.

Some Notes on the Golden Eagle. By Duncan McDonald.—Excellent photographs.

Notes on the Courtship of the Tufted Duck and its Distribution in Scotland. By Henry Boase.

American Bittern Shot in Co. Kerry.—Curiously enough the original type specimen was shot in England.

Oölogists' Record. V, No. 4. December 1, 1925.

Random Notes from Estonia (Baltic States). By R. F. Meiklejohn.

Nests of Californian Birds.—Some excellent photographs by Wright M. Pierce.

On Collecting Eggs. By E. C. Stuart Baker.

Oölogical Records from Nyasaland. By A. H. Paget Wilkes.

Avicultural Magazine. December, 1925–February, 1926. (4th series) III, No. 12—IV, No. 2.

Note on the Norfolk Island Parakeet, *Cyanorhamphus cooki*. By the Marquess of Tavistock.

On the verge of extinction. (Dec.)

Notes from Rhodesia. By Sydney Porter. (Dec. and Jan.)

Humming Birds and Motmots. By J. Delacour. (Feb.)

Bee-eaters and Nightjars. By M. Legendre. (Feb.)

Austral-Avian Record. V, No. 4. January 11, 1926.

Another New Book which Necessitates Changes in Nomenclature. By G. M. Mathews.—The 'Museum Gerersianum' 1787, contains 102 new names many unrecognizable but others preoccupy later names, mainly of South American birds.

Revue Francaise d'Ornithologie. XVII, No. 199. November, 1925. [In French.]

Critical Notes on the Types of *Corvus ruficollis* and *C. fuscicollis*. By H. Heim de Balsac.

Description of a New Subspecies of *Saxicola torquata*. By A. Blanchet.—*S. t. desfontainesi* (p. 277), Oued Bezirk.

Study of a Collection made by M. E. Wagner in the Chaco Region. By A. Menegaux (cont. in December).

On the Food of *Gelochelidon nilotica*. By A. Blanchet.

Revue Francaise d'Ornithologie. XVII. No. 200. December, 1925. [In French.]

An Ornithological Excursion to the Camargue. By P. Chabot.

On the Researches of M. X. Raspail on the Cuckoo. By Mme. G. Raspail.

On the Sex of the Woodcock on the "fall." By J. Stolzmann.

On a New Subspecies of *Fringilla coelebs*. By J. Rapine.—*F. c. sarda* (p. 333) Sardinia.

Notes on a Colony of Bank Swallows in Calvados. By M. Legendre.

Revue Francaise d'Ornithologie. XVIII, No. 201. January, 1926. [In French.]

Descriptions of two New Larks from Africa. By L. Levauden.—*Galerida cristata helenae* (p. 6), Ft. Polignac and *G. c. courtoti* (p. 7) N'Guimi, north shore of Lake Tchad.

An Outline of the Food Habits of the Gruiformes, Charadriiformes and Lariformes. By P. Madon.

A Discussion of Jourdain's 'A Study on Parasitism in the Cuckoos.' By J. de Chavigny.

With this issue the 'Revue' which was purchased by the Société Ornithologique de France from M. Menegaux during the year, appears in a new cover and of slightly smaller page, it would be still further improved if the text and plates were bound in the cover as when loose they are always in danger of being lost.

L'Oiseaux. VI, Nos. 8–12. August–December, 1925. [In French.]

The accounts of the various families which have been running in this journal are continued, the Hoopoes, Hornbills, Kingfishers, Rollers and Podargi being described in these issues.

Gangreen in the Feet of Birds. By A Monquet and Truche. (Aug.)

Brinsop Court in May, 1925. By J. Delacour.—Mr. H. D. Astley's beautiful home and avaries with colored plates of the Mandarin Duck by Mr. Astley. (Sept.)

This journal is mainly devoted to accounts of the breeding of various birds in captivity.

Le Gerfaut. XV, No. 4. 1925. [In French.]

Coeleus monedula soemmeringii in Belgium. By Ch. Dupond.

Journal für Ornithologie. LXXIV, Heft 1. January, 1926. [In German.]

Remarks on Some Persian Birds. By N. Sarudny and N. Harms.

Review of Bird banding in 1923–1924.—Many returns recorded.

The Saharan Migration Route Again. By H. Geyer von Schweppenburg.

Occurrence of the Canary in Hungary. By J. Schenk.

Ornithology of the East Prussian Uplands. By H. Casemir.

Contribution to the Life Histories of the Birds of German East Africa. By L. Schuster.

In Memoriam, Herman Schalow. By F. von Lucanus.—Schalow's Ornithological History. By E. Stresemann.

Ornithologische Monatsberichte. XXXIII, No. 6. November–December, 1925. [In German.]

Reaction of Songbirds to alterations to the Eggs. By B. Rensch.—Experiments on the actions of the birds when the eggs were colored, exchanged for those of other species or changed in number. The reaction was different in different species.

Distribution and Migration of the White Stork in Russia and Poland. By H. Grote.

Oenanthe opistholeuca (Strickl.) a Melanistic Mutant of *O. picata*. By E. Stresemann.

In "Notes" a new genus is proposed: *Hartertula* (p. 186) for *Neomixus flavoviridis*.

Ornithologische Monatsberichte. XXXIII, No. 7. January, 1926. [In German.]

The Systematic Position of *Muscicapa semitorquata* E. v. Homeyer. By E. Stresemann.

Studies of Tree Eyries of German Birds of Prey. By G. Silvermann.

In "Notes" Stresemann describes *Certhia brachydactyla spatzi* (p. 15) Crete and *Gerygone sulphurea plesseni* (p. 22) Bali. G. Schebel proposes as new *Troglodytes t. stresemanni* (p. 14) from Crete and H. Grote, *Smithornis capensis suahelicus* (p. 17).

Ornithologische Beobachter. XXII, No. 12–XXIII. No. 3. September–December, 1925. [In German and French.]

Biography of Herman Fischer-Sigwart. By F. Zschokke. (September.)

Turdus pilaris as a Breeding Bird of Switzerland. By A. Stierlin.

Here and There in Egypt and the Anglo-Egyptian Sudan. By A. Mathey Duprez. (Oct.–Dec.)

Contributions to the Development of Birds. II, No. 1. January, 1926. [In German.]

Breeding of *Oenanthe oe. seebohmi.* By E. Hartert.

High Breeding of *Anser anser* and *Netta rufina.* By O. Heinroth.

On the Breeding Place of *Sylvia sarda.* By P. Henrici.

Yearbook of the Netherlands Ornithological Club. No. 15, Afl. 5. December, 1925. [In Dutch.]

Netherlands Ornithology.

Nesting of *Falco peregrinus ernesti* in Java. By M. Bartels, Jr.

Zanclostomus javanicus.

Ornithological Articles in Other Journals.

Preece, W. H. A. January Bird Notes from Mount Tolmie, Victoria, N. C. (*Canadian Field Naturalist,* November, 1925.)

Lewis, Harrison F. The New Bird Sanctuaries in the Gulf of St. Lawrence. (*Canadian Field Naturalist,* November, 1925.)

G. D. Sprot. Bird Banding Report, Mavisburn Station, Victoria Island, B. C. (*Canadian Field Naturalist,* November and December, 1925.)

Bayley, Ivan A. The Birds of Bird Islands, Nova Scotia. (*Canadian Field Naturalist,* November, 1925.)

Cummins, R. A. Observations on the Chinese Starlings (*Ethiopsar cristatellus*). (*Canadian Field Naturalist,* November, 1925.)

Official Canadian Records of Bird Banding Returns. (*Canadian Field Naturalist,* November and December, 1925.)

Davison, D. W. Nesting of the Canada Goose in a Tree. (*Canadian Field Naturalist,* December, 1925.)—Young were seen to drop over the side of the nest and fall twelve feet without injury.

Lewis, Harrison F. Bird Banding in Townsend's Labrador. (*Canadian Field Naturalist*, December, 1925.)

Christmas Bird Censuses, 1925. From many Canadian localities. (*Canadian Field Naturalist*, January, 1925.)

Stenhouse, J. H. Jerdon's Reed Warbler (*Acrocephalus agricola*) at Fair Island; and Addition to the British Avifauna. (*Scottish Naturalist*, Nov.-Dec., 1925.)

Baxter, E. V. and **Rintoul, L. J.** Fluctuations in Breeding Birds on the Isle of May. (*Scottish Naturalist*, Nov.-Dec., 1925.)

Horsfall, R. Bruce. Feathered Guests of the Winter Snows. (*Nature Magazine*, January, 1925.—One year, somewhere in New Jersey.

Finley, W. L. and Irene. The Giant and the Elf. (*Nature Magazine*, January, 1925.)—*Micropallas whitneyi* in the Tucson Mountains, Arizona.

Judd, C. S. Surveying Bird Islands. (*American Forests and Forest Life*, February, 1926.) Nihoa, Necker, etc. of the Hawaiian Reservation.

Vreeland, F. K. A Battle Among the Crags. (*American Forests and Forest Life*, March, 1925.)—A Golden Eagle swooping at some fawns, which, however, he did not actually attack. Such articles will unfortunately be used as basis for placing another splendid bird in the vermin class, to be exterminated. No doubt these birds occasionally do destroy game animals and game birds and always have, but why should the wilderness be robbed of such majestic inhabitants simply to allow man to slaughter *all* the game.

Wade, Margaret. Jack Miner and his Friends of the Sky and Soil. (*The Flower Grower*, November, 1925.)

Sutton, George M. Feeding the Birds in Winter. (*Pennsylvania School Journal*, December, 1925.)

Mortensen, Th. Herluf Winge (*Smithsonian Report*, for 1924).—A biographical sketch.

von Burg, G. Retrospect and Conclusion. Bern, 1925, pp. 1–24.—An account of his life work. (In German.)

Drost, Rudolf. A New Method for the Study of Bird Migration. (*Die Erde*, III, No. 10, 1926.)—An explanation of bird banding. (In German.)

Meylan, Olivier. The close association of nests of the Water Ouzel and Yellow Wagtail. (*Bull. Soc. Zool. Geneve* III, No. 5, January, 1925.) (In French.)

Nice, M. M. and L. B. Some Bird Observations in Cleveland County in 1924. (*Univ. Oklahoma Bull.*, Vol. V, 1925.)

Murrill, W. A. The English Sparrow (*Torreya*, Jan.-Feb., 1925.)—Gives an instance of its persistent feeding on insects.

Reports received dealing with bird conservation are the following:

Twenty-first Annual Report of the National Association of Audubon Societies. (1974 Broadway, N. Y.)

Report of the Chief of Bureau of the Biological Survey, U. S. Department of Agriculture. (Washington, D. C.)

Fifteenth Annual Report of the New Jersey Audubon Society. (164 Market St., Newark, N. J.)

Fins, Feathers and Fur, No. 44, Dec. 1925. (Minnesota Dept. of Conservation, State Capitol, St. Paul, Minn.)

Bird Notes and News, Winter Number, 1925. (Royal Soc. for the Protection of Birds, 82 Victoria St., London, S. W. 1, England.)

CORRESPONDENCE

Hawk Extermination

Editor of 'THE AUK':

On looking over the reports of bird observations throughout the United States for the season of August 15 to October 15, 1925 (Bird-Lore, Nov.–Dec., 1925, p. 402), I have been struck by the marked absence of Hawk records. This is certainly not attributable to lack of interest in these birds nor to any difficulty in observing them, since of all birds they most easily attract attention. Nor can it be fairly said that the southward migration was not, during part of this period, fairly underway.

Judging from this record there can be no question but that many of our Hawks are doomed very soon to join the Passenger Pigeon and Carolina Paroquet.

Both the shotgun and the trap are responsible. Since 1922, and probably earlier, a farmer in Delaware has been trapping Hawks wholesale. During the fall and winter of 1922–1923, up to January 20, he had captured thirty-five and as many as six in a single day. His methods were widely advertised in the press and his farm visited by many admirers who have doubtless used his methods. I visited him in September 28, 1923. Near the traps a Buteo Hawk was fastened to the ground by a fifteen foot chain and the bird half stood, half lay, in the grass. It appeared very weak and had had no food since its capture several days previous. It was slowly dying from starvation, a broken leg, and the "blowing" of the flies in its wounds.

But more Hawks are shot than are trapped. I know of four places in New Jersey where this so-called sport is regularly carried on during both migrations, and evidence is accumulating that the practice has been spreading. Unfortunately, one of the sportsmen's magazines has recently been giving this method of slaughter an even wider publicity.

The "sport" is already nearly finished, however, for, as numerous letters from New Jersey testify, the Hawks are becoming extremely scarce, even during the migrations. Only a few years ago, as many as a thousand Hawks could be seen at Cape May, N. J., in a single autumn day. But in the fall of 1925, on two separate days, Mr. Julian K. Potter reports respectively 236 and 30. On both days, the migration was at its crest. The 30 had been bagged by a *nature-waster!* "All were immature birds and all were sharp-shinned Hawks, except one Sparrow Hawk and one Broad-winged Hawk." The gunner had brought down no Red-tailed, Red-shouldered, or Duck Hawks during a day's shooting.

A former killer of Hawks in northern New Jersey has written me each year for the past two or three years that the "sport" is not what it used to be. The latest evidence on this point comes from still another user of the shotgun, in New Jersey. Under date of Jan. 17, 1926, he writes: "At

present there is nothing doing—we have no general visitation of Goshawks this season, nor have we had a flight for some 6 or 7 years, though I generally kill one or more during each fall or winter.—*Rightfully, this "sport" is resented by many naturalists and nature lovers* (italics are mine)—I feel convinced that this shooting has reduced the number of Hawks that come through noticeably, as I have not seen as big flights during the last few seasons as I did years ago." He adds that he regrets that an account of his methods has been published, since "so many have copied and are using the Owl for promiscuous killing."

Now, it seems obvious to me that if our American Hawks are to be saved there is not a moment to lose. The indiscriminate nature-wasters have two arguments which are peculiarly unsound.

(1) That the annual slaughter at Cape May, N. J., and elsewhere is merely equivalent to an open season, like the open season for deer. But it is difficult to see how anyone can talk of an *open* season on Hawks, when there is no *closed* season during which they are actually protected. In Pennsylvania, deer are protected the entire year, except for 10 days. Moreover, they have no migrations, and they can hide in the woods. It is ludicrous to compare with this the decimation and worse than decimation of the Hawks, protected at no time and no place, and without shelter during the migrations at their points of concentration.

(2) The second argument is the old, old song and dance—that there is no evidence that these birds are decreasing. One is reminded of the calm complacency with which members of Congress made a similar statement about the Buffalo, and of the friends of Noah who, as he built his ark, declared that there was "no evidence" of approaching precipitation.

The cure which I suggest is an immediate campaign for the passage of State laws, making it illegal to shoot or trap any species of Hawk by means of a live or mounted Owl, Hawk or other decoy of any description, or to shoot any species of Hawk, at any time, migrations or no migrations, except when it is caught in the act of attacking domestic fowl or game birds on private reservations.

I believe that the Owl and other decoys are the cause of most of the unreasonable killing. And I believe no law will have popular support, or be enforceable, which forbids the farmer or land owner to protect his own property from petty larcency. At least the first part of the law, moreover, would be easy to enforce, since Hawk shooting with an Owl is visible and audible a long way off.

Who will guarantee us against a plague of mice or insects if all the Hawks are to be wiped out?

It is time that Nature Lovers claimed their share of rights from the Nature Wasters. It is time for us to protect for our children their rightful heritage.

Yours sincerely,

3115 Queen Lane,
Germantown, Phila.

HENRY R. CAREY,

Present Status of the Woodcock.

Editor of 'THE AUK':

"Ozark Ripley," writing in the 'Sunday Journal' of Milwaukee, Wis., date of February 14, 1926, heads his article "Woodcock Plentiful in the Middle West." While my own observations are purely local, and tend to show this bird scarce here, where in former years it was common, I am wondering to what extent bird observers can corroborate Mr. Ripley's statement. Report your observations to me, and I will condense the concensus of opinion into an article for some future issue of this journal.

W. E. SNYDER,

Beaver Dam, Wis.

NOTES AND NEWS.

Prof. Herman Schalow and Honorary Fellow of the American Ornithologists' Union, and Honorary President of the German Ornithological Society, died on the night of December 9, 1925, in the seventy-fourth year of his age. A notice of his life and work will appear later.

THE SIXTH INTERNATIONAL ORNITHOLOGICAL CONGRESS will be held at Copenhagen, Denmark May 24–26, 1926. The President of the Congress is Dr. Ernst Hartert who has worked hard to form a new International Ornithological Committee of 106 members representing thirty-five countries in all parts of the world. The Executive Committee, consists of representatives of six countries as follows: America, Jonathan Dwight and Alexander Wetmore; Denmark, E. Lehn Schiöler and C. Wesenburg-Lund; Germany, E. Stresemann and Herman Grote; France, A. Menegaux and Heim d'Balsac; Great Britain, W. L. Sclater and H. F. Witherby; and Sweden, A. Lönnberg and Nils Gyldenstolpe. The Secretary is P. Bovien, 4, 6 Uraniavej, Copenhagen, Denmark, with whom all those who contemplate attending the congress should communicate. There will be five sections of the Congress before which communications will be made: I, Systematic Ornithology; II, Anatomy, Physiology, Heredity and Evolution; III, Biology, including Ecology and Bird Migration; IV, Oölogy, Nidification; V, Bird Protection and Aviculture.

THE BUREAU OF BIOLOGICAL SURVEY of the U. S. Department of Agriculture has made a count of the Whistling Swans wintering on Chesapeake Bay, Back Bay, Va., and Currituck Sound, N. C., in which spots practically all of the Swans of eastern North America are congregated in the winter. The total count was 14,567 of which 6,920 were on Chesapeake Bay. The ten year closed season terminates in December, 1926, but the birds will continue to be protected unless regulations are promulgated by the President allowing an open season. During the past ten years the birds have undoubtedly become much tamer and bolder in the presence of man, but there are no data upon which their increase or decrease can be estimated.

DR. AND MRS. A. W. ANTHONY of New York have deeded twenty-six additional acres to the Thorncrag Reservation of the Stanton Bird Club at Lewistown, Me. making possible the conservation of a wild tract in the center of what will soon be an industrial city.

THE RESEARCH WORK carried on by Mr. S. Prentiss Baldwin at Hillcrest Farm, Gates Mills (near Cleveland), Ohio, has been organized under the name "The Baldwin Bird Research Laboratory."

Mr. S. Charles Kendeigh of Oberlin, Ohio, who was assistant to Mr. Baldwin last season, will return to the work for this season. Mr. Rudyerd Boulton will come from the Carnegie Museum, Pittsburgh, and will be at Hillcrest Farm after April 15 for the season.

Mr. T. Walter Weiseman who made the movie film, "The House Wren," with Mr. Baldwin last season, will probably be at Hillcrest Farm a part of this season.

Ornithologists who can visit Cleveland this summer will find a cordial welcome from Mr. Baldwin and his assistants, if they visit the Research Laboratory.

THE RIDGWAY MEMORIAL.—As already announced in the last number of 'The Auk,' the American Ornithologists' Union, in cooperation with the Cooper Ornithological Club and the Wilson Ornithological Club, is actively forwarding plans for a suitable memorial to the work and services of Robert Ridgway, the dean of American ornithologists. This memorial will, it is proposed, take the form of a sanctuary for birds and other wild life. A tract of land comprising eighteen acres, situated near Mr. Ridgway's home at Olney, in southern Illinois, and named by him "Bird Haven" on account of its attractiveness to bird life, is admirably adapted to this purpose. Its varied topography of little hills, ravines, streams, woods, and open grasslands accounts for its remarkably large number of different trees, bushes, and flowering herbaceous plants, and for its variety of bird life. Nearly 150 species of birds have been recorded from this area.

Mr. Ridgway has offered to donate this property for a wild life sanctuary if a fund sufficient for its maintenance can be obtained. This is therefore an unusual opportunity to save this area for the preservation of birds and plants, and at the same time to erect a fitting memorial to America's great bird lover.

In pursuance of the desire of the American Ornithologists' Union, as expressed through a unanimous vote at its last meeting, a committee has been appointed to raise a fund of $35,000 to carry out this project.

This committee consists of Dr. Harry C. Oberholser, of the United States Biological Survey, Washington, D. C., chairman, representing the A. O. U.; and Mr. Percival B. Coffin, 39 South La Salle Street, Chicago, representing the Wilson Ornithological Club. The Cooper Club's representative will be announced later.

All bird lovers and all persons and organizations interested in conservation are urged to cooperate in raising the fund necessary to establish the *Bird Haven Wild Life Refuge.*

Remittances should be made to the "Ridgway Memorial Fund," and may be sent to any member of the committee above mentioned, or to the First National Bank, Olney, Illinois, which is acting as trustee.

In reply to inquiries regarding the entry into Canada of members from the United States to attend the annual meeting of the American Ornithologists' Union, to be held in Ottawa, October next. We are informed by Mr. F. C. Blair, Acting Deputy Minister of Immigration that "There will be no difficulty at all in delegates temporarily entering this country for that purpose. They do not require passports or other documents. Any Immigration official on the Border will give every consideration to delegates entering Canada."

We trust that a large number of the ornithologists of the United States will begin at once to make such arrangements as may be necessary to ensure their presence in Ottawa in October. There should be a fully representative gathering at the first Canadian meeting.

Dr. A. K. Fisher celebrated his seventieth birthday on March 21, 1926, and twenty-six of his scientific friends and associates gathered at the Naturalists' Field Club house on Plummer Island above Washington to offer congratulations.

There was a shad bake and owing to the fine spring-like weather the table was set out of doors, where numerous birds joined the party, feeding upon the suet suspended from the branches of the trees over the heads of the diners.

Dr. George Bird Grinnell, of New York, Dr. John C. Phillips of Wenham, Mass., Mr. J. Fletcher Street and Dr. Witmer Stone of Philadelphia and most of the Washington ornithologists made up the party.

Owing to lack of funds, the list of members which usually appears in the April issue has been omitted.

Americans who are expected to attend the Congress include: Dr. Jonathan Dwight, Dr. and Mrs. Frank M. Chapman, Dr. and Mrs. Robert Cushman Murphy and Mr. Ludlow Griscom, all of New York; Dr. C. E. Hellmayr of Chicago; Dr. John C. Phillips of Wenham, Mass., and James H. Fleming of Toronto, Ont.